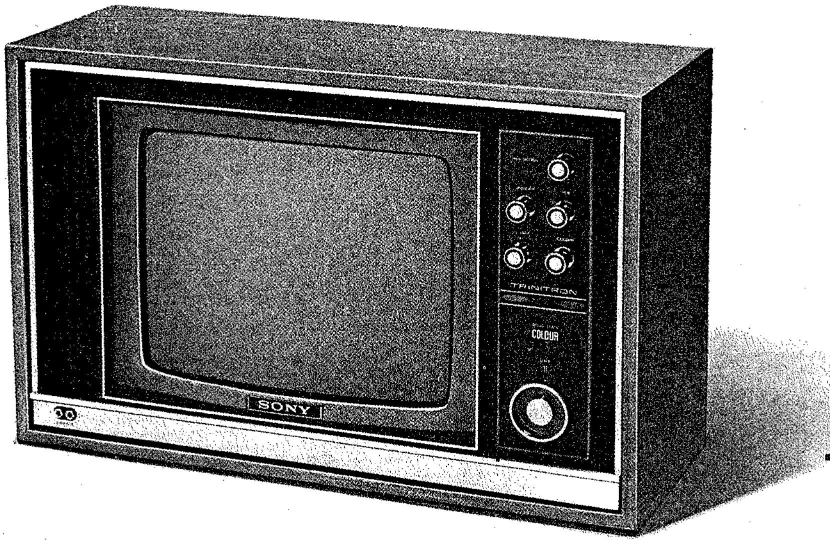
KV-1320UB

UK and Hongkong Model

Serial No. up to 100,000



TRINITRON®
COLOUR TV

SPECIFICATIONS

TV-signal standards: British colour TV standards (CCIR system I)

Semiconductors: 68 transistors, 40 diodes, 1 high voltage rectifier, 2 thermistors, 2 ICs, 2 posistors and 2 VDRs

Channel coverage: UHF; ch. 21 ~ 68

Aerial system: 75-ohm aerial terminal type

IF circuit: 5 stages with 2 double tuned and 3 single tuned elements

Intermediate frequency: Picture i-f carrier; 39.5 MHz
Sound i-f carrier; 33.5 MHz

Video system: Red, green and blue cathode drive system

Sound system: 6 MHz intercarrier system
Power output; 1 watt (at 10% harmonic distortion)
Speaker; 8x12 cm, 16-ohm voice coil

Convergence correction system: Horizontal; electrostatic deflection system
Vertical; magnetism correction system of magnet

Automatic controls: ACC (automatic colour control)
ACK (automatic colour killer)
ADG (automatic degaussing)
ABL (automatic brightness limiter)
ANC (automatic noise canceller)
AFC (automatic frequency control)
AFT (automatic fine tuning)
AGC (automatic gain control)
AVR (automatic voltage regulator)

Power requirements: AC 240V, 50 Hz

Power consumption: AC 98 watts

Jack: Earphone jack 2 pcs

Dimensions: 506 mm (W) x 338 mm (H) x 445 mm (D)

Accessories: Earphone ME-20B
Polishing cloth
Instruction manual etc.

SONY®
SERVICE MANUAL

TABLE OF CONTENTS

WARNING!!

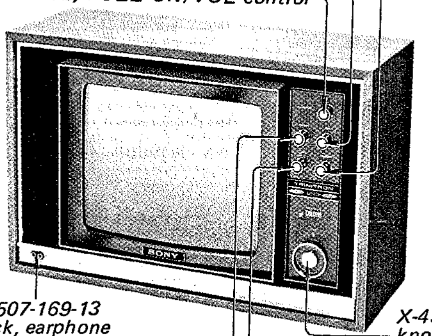
THIS CHASSIS OPERATES WITH ONE SIDE OF THE POWER LINE CONNECTED TO THE CHASSIS. TO ELIMINATE SHOCK HAZARD AND PROTECT EQUIPMENT WHEN SERVICING THE SET WITH THE COVERS REMOVED, MAKE SURE THAT THE SET IS PLUGGED INTO A SUITABLY-RATED ISOLATION TRANSFORMER.

X-RAY RADIATION WARNING!!

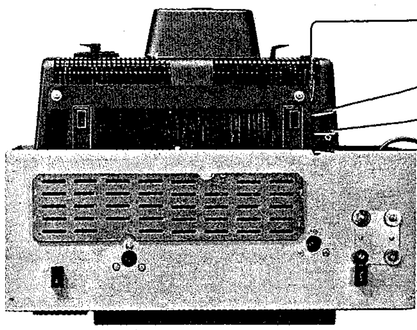
BE SURE THAT PARTS REPLACEMENT IN THE HIGH VOLTAGE BLOCK AND ADJUSTMENTS MADE TO THE HIGH VOLTAGE CIRCUITS BE CARRIED OUT PRECISELY IN ACCORDANCE WITH THE PROCEDURES GIVEN IN THIS MANUAL.

SECTION 1
OUTLINE

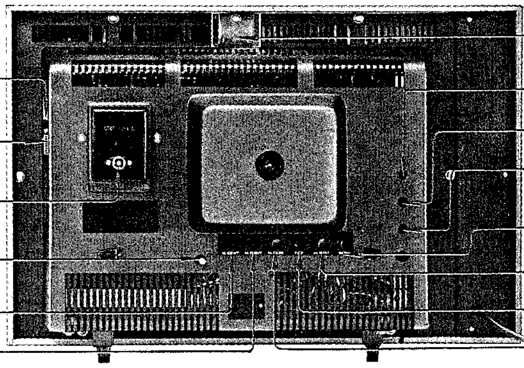
1-1. EXTERNAL VIEW



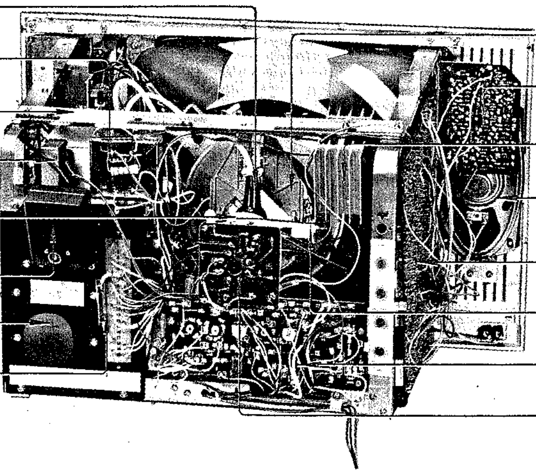
Front View



Bottom View



Rear View



Inside View

SECTION 2
DISASSEMBLY

2-1. REAR COVER REMOVAL

1. Pull off the VER and BRT control knobs.
2. Remove nine screws labeled A1 ~ A9 in Fig. 2-1.
3. Place the unit rear-side-up on a padded work surface.

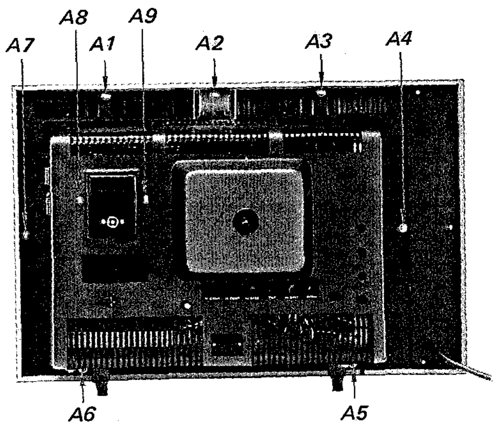


Fig. 2-1.

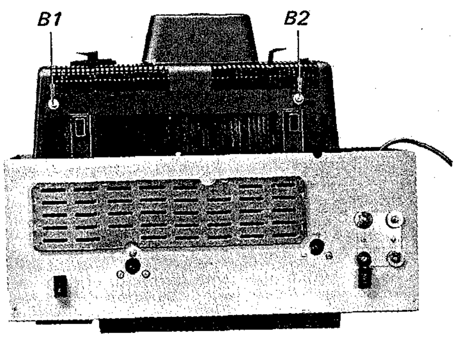


Fig. 2-2.

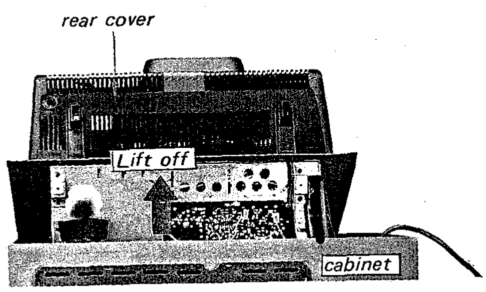


Fig. 2-3.

4. Remove the two screws labeled B1 ~ B2 in Fig. 2-2.
5. Lift off the rear cover as shown in Fig. 2-3.

2-2. CABINET REMOVAL

1. Remove the rear cover.
2. Remove the two screws labeled C1 ~ C2 in Fig. 2-4.
3. Remove the two screws labeled D1 ~ D2 in Fig. 2-5.
4. Lift off the cabinet as shown in Fig. 2-6.

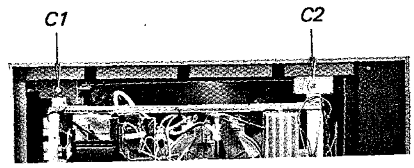


Fig. 2-4.

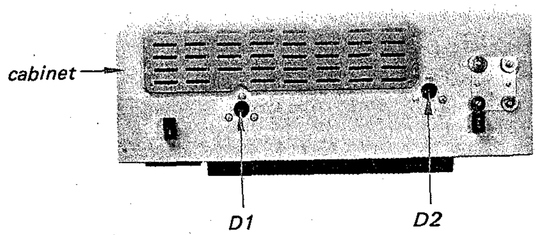


Fig. 2-5.

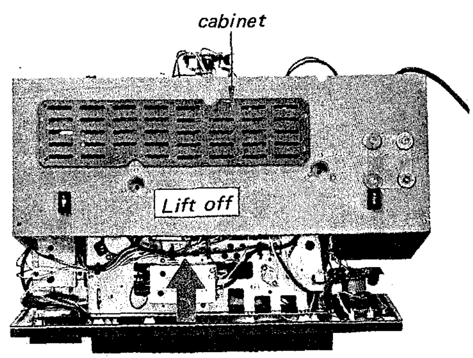


Fig. 2-6.

2-3. CONTROLS AND AFT SELECT SWITCH REPLACEMENT

1. Remove the rear cover.
2. Pull off the PULL ON/VOL, HUE, COLOUR, PICTURE, and AFT control knobs.
3. Remove the four screws labeled E1 ~ E4 in Fig. 2-7.
4. Remove the screw labeled F1 in Fig. 2-8.
5. Remove the front side variable resistor insulating board as shown in Fig. 2-9.
6. Replace a control (PULL ON/VOL, TINT, COLOUR or PICTURE) or AFT select switch.

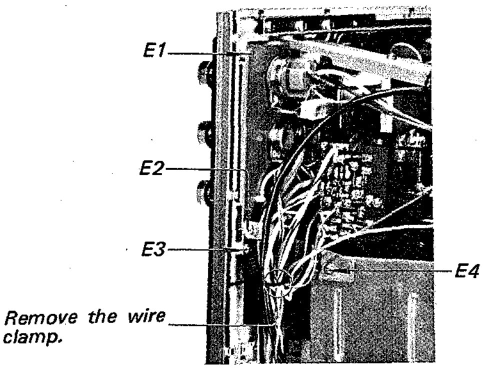


Fig. 2-7.

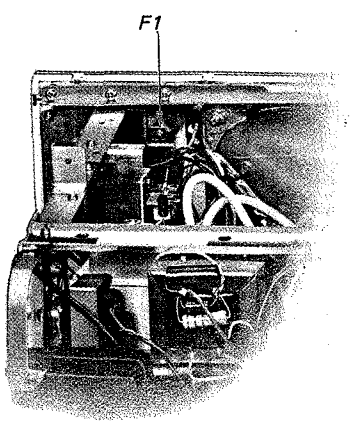


Fig. 2-8.

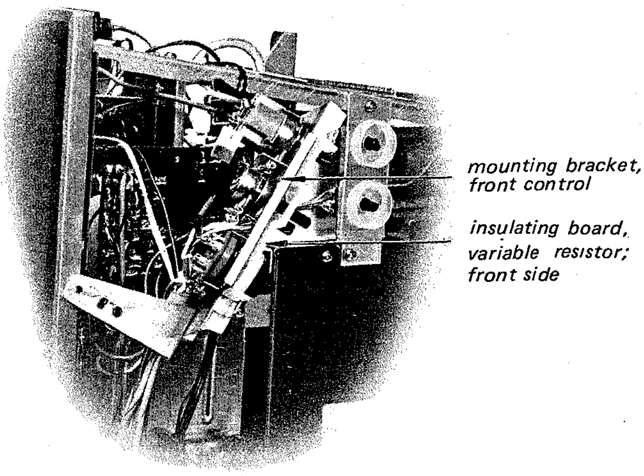


Fig. 2-9.

2-4. SPEAKER REPLACEMENT

1. Remove the rear cover and the cabinet.
2. Remove the ID circuit board.
3. Remove the four screws labeled H1 ~ H4, and the speaker holding brackets as shown in Fig. 2-10.
4. Unsolder the two leads which is connected to the speaker.
5. Replace the speaker.

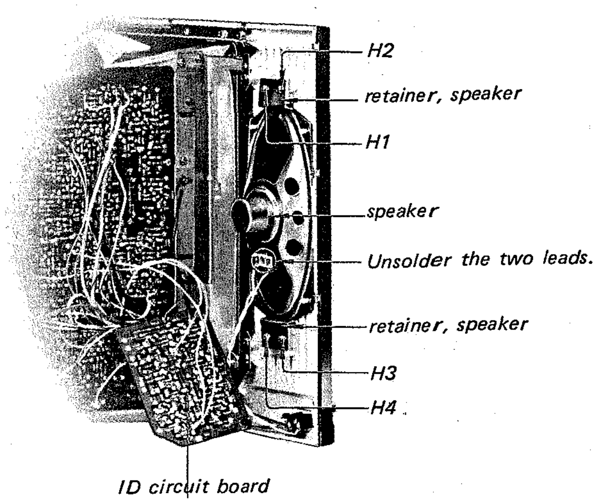


Fig. 2-10.

2-5. UHF TUNER REMOVAL

1. Pull off the UHF fine-tuning control and UHF channel selector.
2. Remove the rear cover and the cabinet.
3. Remove the five screws labeled I1 ~ I5 in Fig. 2-11.
4. Remove the three screws labeled J1 ~ J3 in Fig. 2-12.
5. Unsolder the following leads as shown in Fig. 2-13.

   B1+ .... WHT/BRN
   B2+ .... WHT/ORG
   AFT .... GRY (shielded wire)
   AGC .... YEL

6. Pull out the phono plugs of the ANT input and UIF coaxial cables.

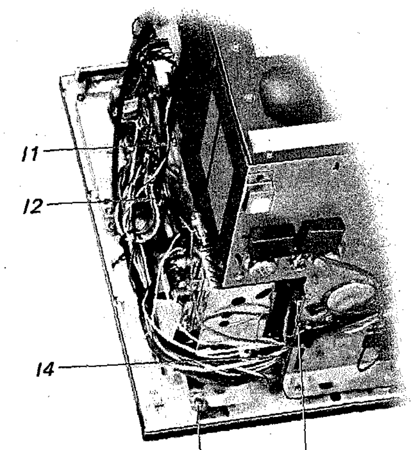


Fig. 2-11.

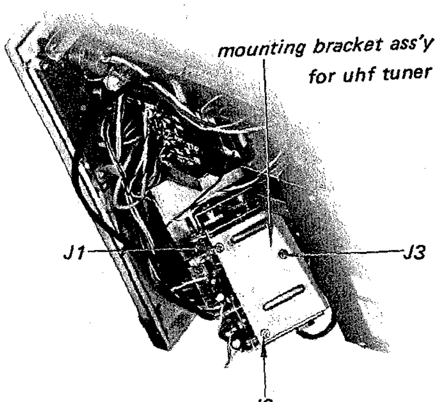


Fig. 2-12.

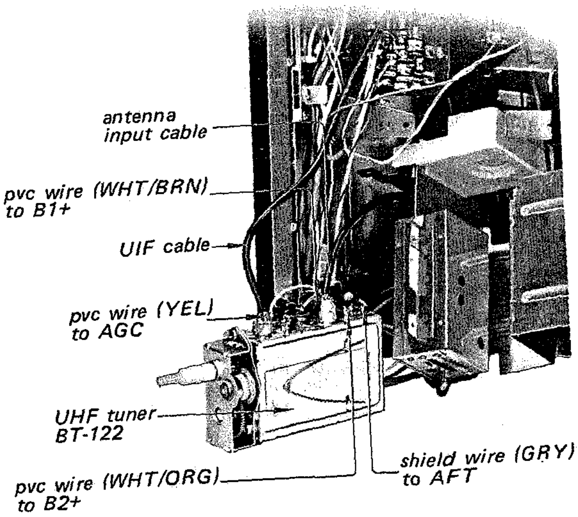


Fig. 2-13.

2-6. PRINTED CIRCUIT BOARD REMOVAL

Remove the rear cover and the cabinet to perform the following items.

S Circuit Board

1. Place the unit rear-side-up on a padded work surface.
2. Remove the two screws labeled K1 ~ K2 in Fig. 2-14.
3. Swing the S circuit board to the front.

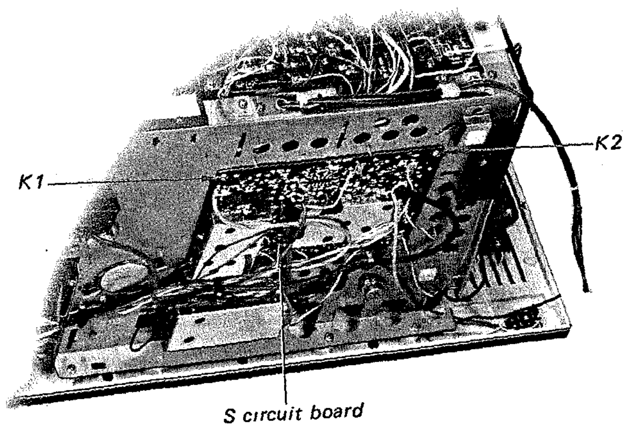


Fig. 2-14.

CD Circuit Board

1. Remove the two screws labeled L1 ~ L2 in Fig. 2-15.
2. Pull out the three pin-plugs on the T circuit board that connect between the red, blue and green output leads of CD circuit board and the T circuit board as shown in Fig. 2-15.
3. Swing the CD circuit board to the front.

ID Circuit Board

Take off the ID circuit board by removing the three screws labeled M1 ~ M3 in Fig. 2-15.

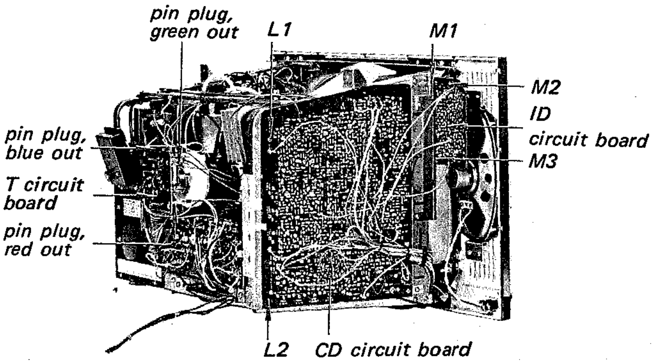


Fig. 2-15.

P Circuit Board

1. Remove the two screws labeled N1 ~ N2 in Fig. 2-16.
2. Swing the P circuit board to the front.

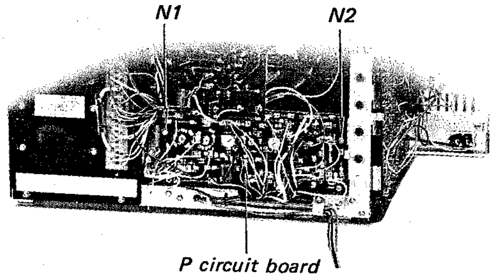


Fig. 2-16.

UIF Circuit Board

1. Remove the three screws labeled P1 ~ P3 in Fig. 2-17.
2. Loosen the lead clamp, and remove the leads. See Fig. 2-17.
3. Swing the UIF block to the front.
4. Remove the UIF shield and the bottom cover.
5. Remove the UIF circuit board.

AFT Circuit Board

1. Remove the two screws labeled Q1 ~ Q2 in Fig. 2-17.
2. Swing the AFT block to the front.
3. Remove the AFT shield and the bottom cover.
4. Remove the AFT circuit board.

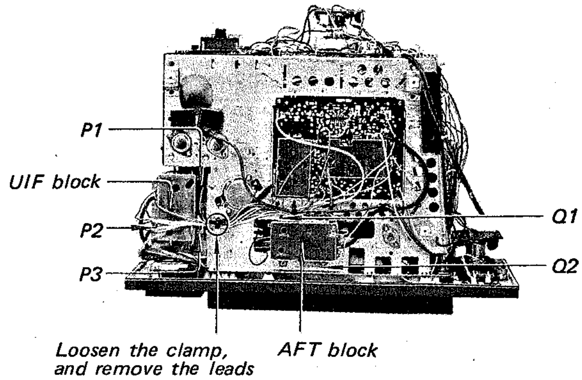


Fig. 2-17.

2-7. PICTURE TUBE REMOVAL

1. Remove the rear cover and the cabinet.
2. Pull off the five control knobs fixed on the upper part of the front panel.
3. Pull off the UHF tuner knob and the UHF dial knob.
4. Unsolder the three leads (two red and one violet) as shown in Fig. 2-18.

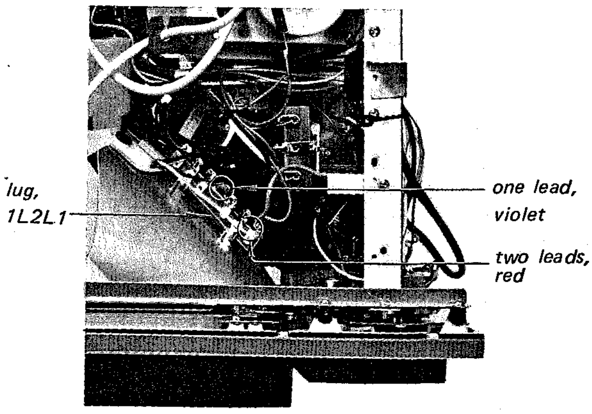


Fig. 2-18.

5. Remove the CD circuit board.
6. Take off the T circuit board from the picture tube.
7. Remove the beam alignment magnet assembly from the picture tube neck, and unsolder the blue lead as shown in Fig. 2-19.
8. Remove the convergence anode cap and the high voltage anode cap from the picture tube. In the convergence anode cap removal, take off the two screws and next the cap by lifting it straight.
9. Unsolder the three horizontal deflection yoke leads (red, green and yellow) as shown in Fig. 2-19.
10. Place the unit rear-side-up on a padded work surface.
11. Unsolder the black lead (grounded to the chassis) on the bottom of the chassis.
12. Unsolder the three leads (white, yellow and green) connected to the secondary terminal of the SOT. See Fig. 2-20.
13. Remove the four screws labeled P1 ~ P4 in Fig. 2-20 and six screws labeled P5 ~ P10 in Fig. 2-21.
14. Remove the chassis by lifting it from the mask assembly.
15. Remove the four nuts labeled Q1 ~ Q4 in Fig. 2-22.
16. Remove the two wing screws in Fig. 2-23, and loosen the clamp screw to take off the deflection yoke.

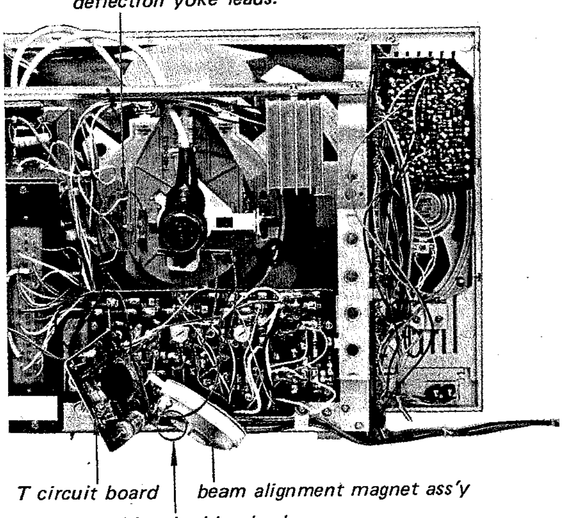


Fig. 2-19.

17. Pull out the picture tube from the mask assembly, and remove the shield cover from the picture tube.
18. Replace the picture tube.

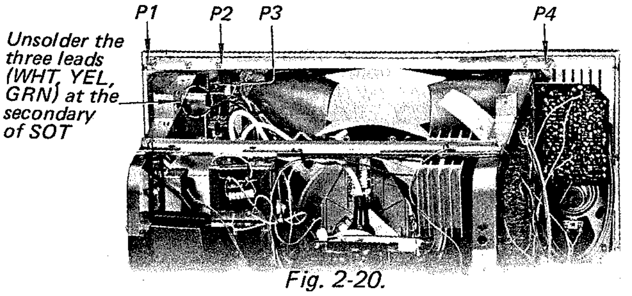


Fig. 2-20.

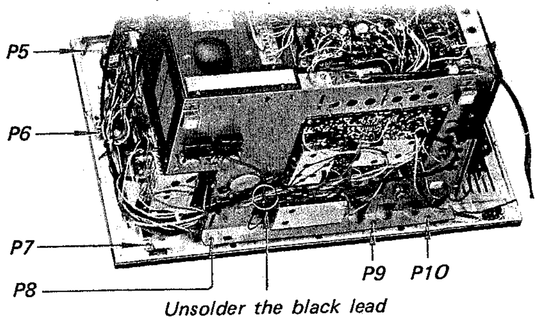


Fig. 2-21.

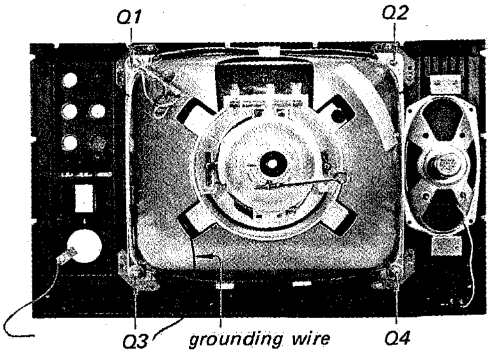


Fig. 2-22.

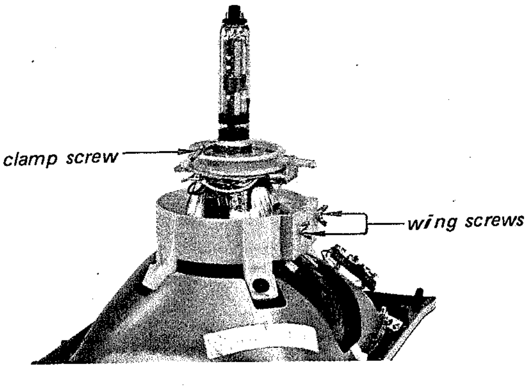


Fig. 2-23.

2-8. PICTURE TUBE INSTALLATION

1. Place the shield cover on the new picture tube. Place the picture tube on the mask assembly.
2. Tighten the four nuts in Fig. 2-22.
3. Install the mask assembly to the chassis, and tighten the four screws labeled P1 ~ P4 in Fig. 2-20 and the six screws labeled P5 ~ P10 in Fig. 2-21.
4. Solder the following leads:
   a. three leads (white, yellow, green) at the secondary terminal of SOT
   b. black lead at the bottom of the chassis
   c. three leads (red, green, yellow) at the horizontal deflection yoke
   d. blue lead at the beam alignment magnet assembly
   e. three leads (two red, one violet) at the lug terminal (1L2L1).
5. Install the convergence and high voltage anode caps.
6. Install the beam alignment magnet assembly (BAM) so that the two terminals on the beam alignment magnet assembly are uppermost (twelve-o'clock position).
7. Install T board on the base of the tube.

2-9. FBT & HOT REMOVAL

1. Remove the rear cover and the cabinet.
2. Remove the antenna terminal board.
3. Move the two caps in the direction shown by the arrows in Fig. 2-24.
4. Remove the four screws labeled R1 ~ R4 in Fig. 2-24.
5. Swing the lid of insulating case as shown in Fig. 2-25. This permits access to the components of the convergence circuit and the socket of the rectifier tube.
6. Remove the four screws labeled S1 ~ S4 in Fig. 2-26.
7. Swing the lid of high-voltage cage down as shown in Fig. 2-27.
8. Pull off the cap of the high voltage rectifier tube.

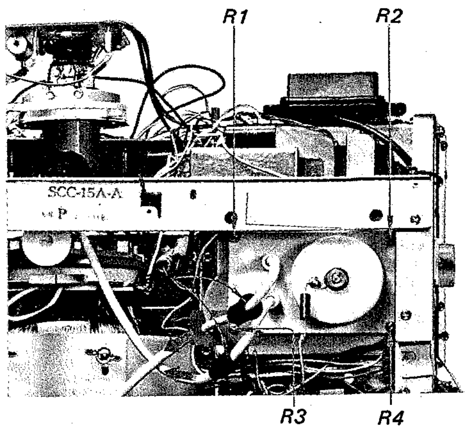


Fig. 2-24.

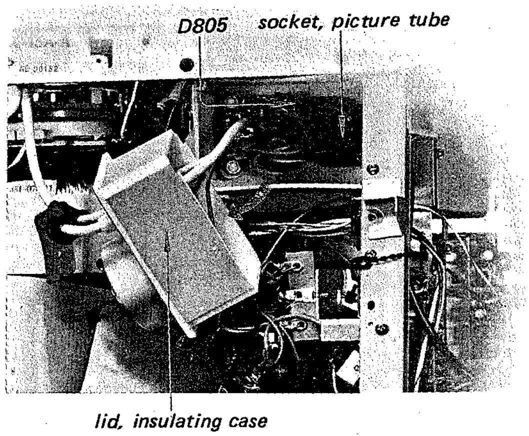


Fig. 2-25.

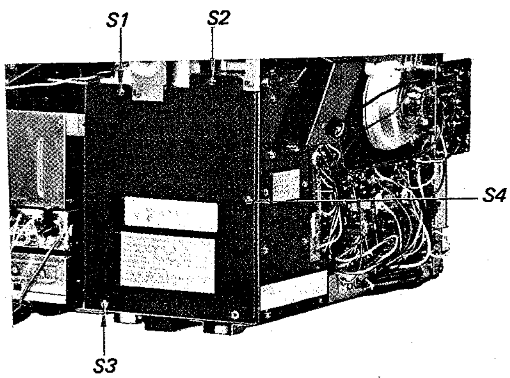


Fig. 2-26.

9. Remove the four screws labeled T1 ~ T4 in Fig. 2-28.
10. Pull off the rear of the high voltage cage as shown in Fig. 2-29.
11. Replace the horizontal output transformer by removing the two screws labeled U1 ~ U2 in Fig. 2-28.
12. Replace the flyback transformer by removing the four screws labeled V1 ~ V4 in Fig. 2-28.

Note: When handling the rectifier tube, put on working gloves.

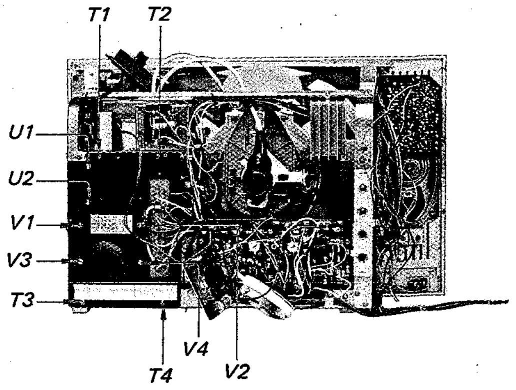


Fig. 2-28.

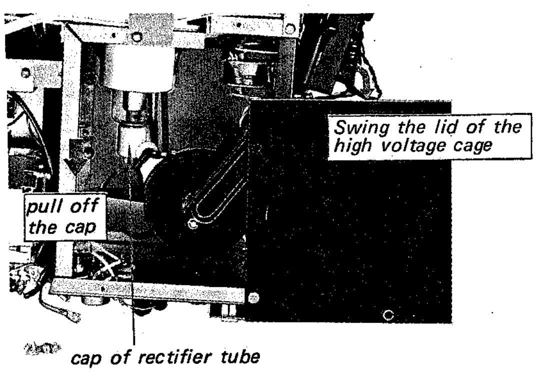


Fig. 2-27.

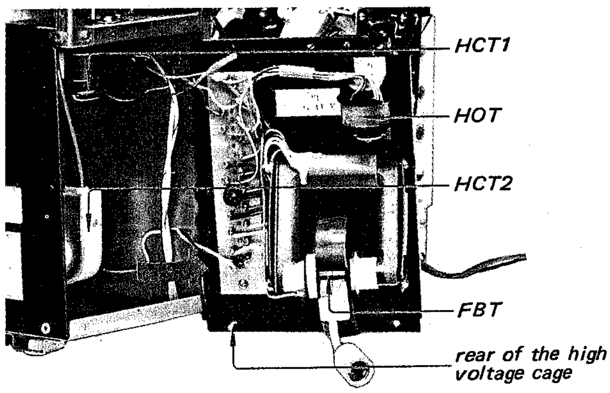


Fig. 2-29.

SECTION 3
SERVICE ADJUSTMENTS

3-1. BEAM LANDING ADJUSTMENTS

Beam landing adjustments are made to ensure correct landing of the three beams on their designated phosphor stripes. Incorrect beam landing at any point on the screen results in colour contamination (a predominant hue) in those particular areas of the screen. Also, this adjustment is used when a complete realignment is needed following picture tube replacement.

Preparation:

1. Receive the dot pattern from the colour-bar generator.
2. Set the horizontal frequency control VR504 and vertical hold control VR906 for correct sync.
3. Set the brightness control at fully clockwise position and the picture control at fully counterclockwise position.

Adjustment Procedure:

1. Face the screen due east or west, and degauss the entire screen area using a degaussing coil.
2. If misconvergence is found on the screen, adjust the horizontal static control (H-STAT) for best convergence at the centre of the screen.
3. Set the purity magnet control to the mechanical centre to obtain minimum magnetic field as shown in Fig. 3-1.
4. Loosen the clamp screw that secures the deflection yoke.
5. Slide the deflection yoke forward against the funnel of the picture tube.
6. Pull off the pin-plugs of the red and blue leads on the T board. The screen should appear as shown in Fig. 3-2.
7. Adjust the purity magnet control to centre the vertical green band on the screen as shown in Fig. 3-3.
8. Slide the deflection yoke back towards the tube base to obtain a uniform green over the entire screen.

   Note: In this case, do not set the deflection yoke too far from the funnel of the picture tube.
9. Check red and blue rasters for uniformity, and clamp the deflection yoke in place.
10. If slight mislanding are found, make touch-up adjustments with the purity magnet.
11. If mislanding are found at the four corners, stick a small disk magnet with the double stick tape on the deflection yoke holder. After using the small disk magnet, degauss the entire screen area and make sure that mislanding is not appear on the screen.
12. Push the pin-plugs of the red and blue leads on the T board to produce a white raster.
13. If mislanding is still found, touch up the purity magnet control and the position of the deflection yoke.
14. Face the screen due south or north, and degauss the entire screen area using a degaussing coil.
15. Confirm that no mislanding is found on the screen.

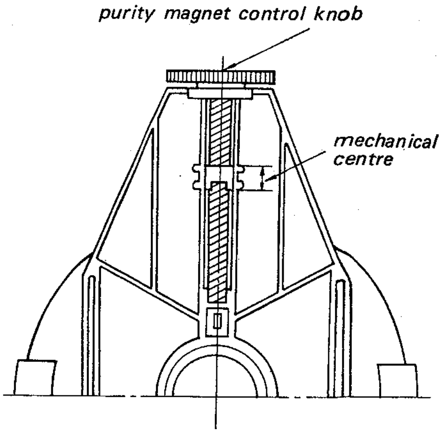


Fig. 3-1.

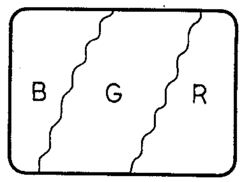


Fig. 3-2.

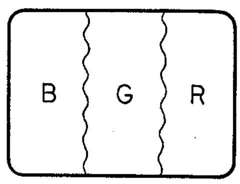


Fig. 3-3.

3-2. CONVERGENCE ADJUSTMENTS

Static Convergence Adjustments

Preparation:

1. Receive the dot pattern from the colour-bar generator.
2. Set the brightness and picture controls to obtain optimum picture on the screen.
3. The landing and white balance adjustments should be completed before starting the convergence adjustments.
4. The following adjustments should be completed:
   a. Focus adjustments (See page 23)
   b. Horizontal size adjustments (See page 22)
   c. Vertical height and linearity adjustments. (See page 23)
   d. Pincushion correction (See page 23).
5. Take off the horizontal and vertical magnetic convergence (HMC and VMC) controls.

Horizontal Static Convergence

Adjustment Procedure:

1. Adjust the horizontal static convergence control (H STAT) to converge the red dots and the blue dots with the green dots at the centre of the screen. See Fig. 3-4.
2. If the dots do not converge with the green and red dots at the centre of the screen, adjust the horizontal magnetic convergence control (HMC) as necessary. See Fig. 3-5 and Fig. 3-6.

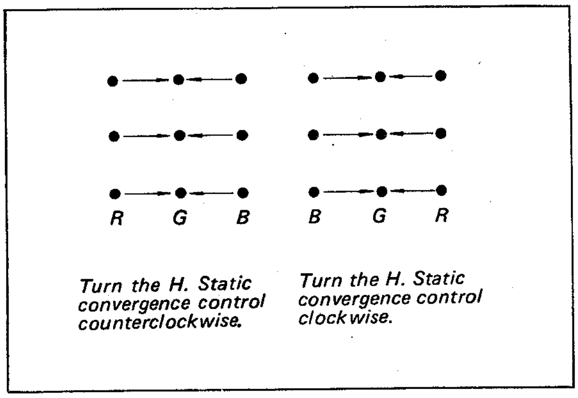


Fig. 3-4.

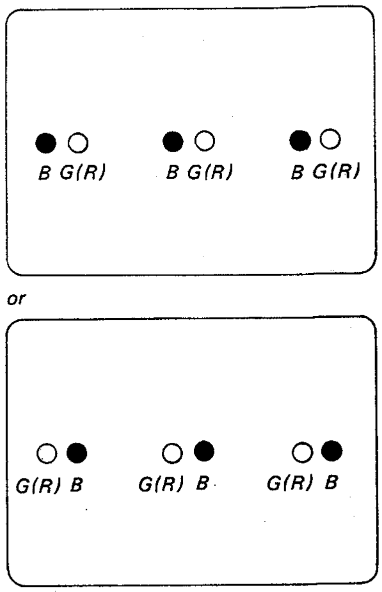


Fig. 3-5.

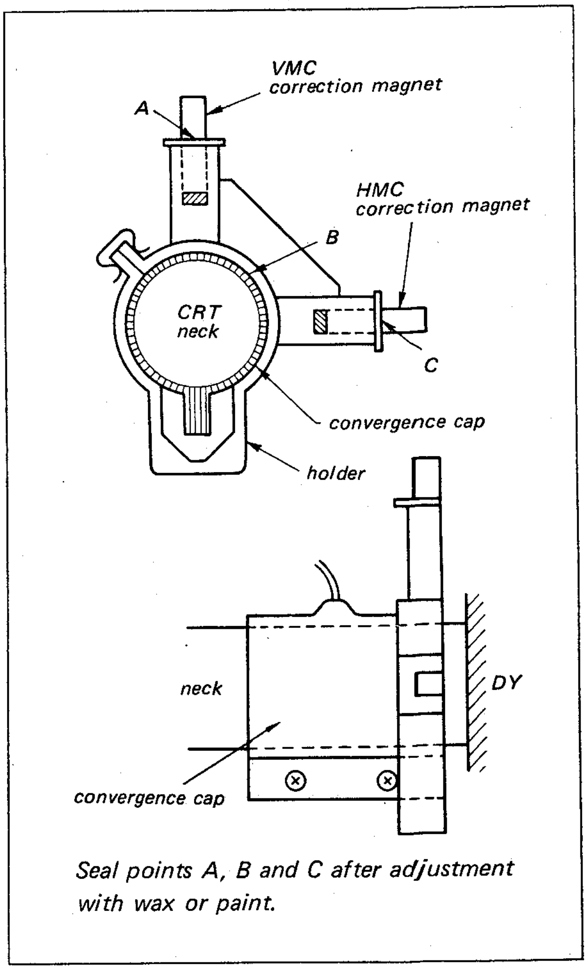


Fig. 3-6.

Vertical Static Convergence

Adjustment Procedure:

1. Spread the two tabs of beam alignment magnet in equal amounts opposite directions to converge red dots and blue dots with green dots. See Fig. 3-7, Fig. 3-8 and Fig. 3-9.
2. If the blue dot does not converge with the green and red dots at the centre of the screen, adjust the vertical magnetic convergence control (VMC) as necessary. See Fig. 3-10.

Note: 1. If it is necessary to correct convergence by using the HMC and VMC controls, mislanding may be found on the screen. Therefore, repeat the landing adjustment.

2. In most cases adjustment of the HMC and VMC controls will not needed. Therefore, most of the unit have no HMC and VMC.

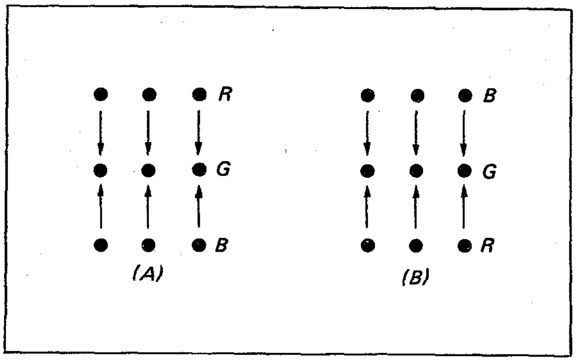


Fig. 3-7.

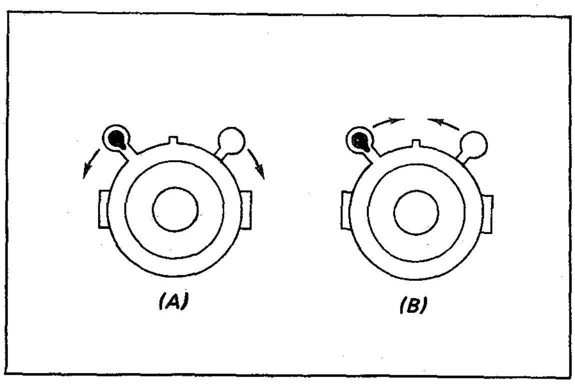


Fig. 3-8.

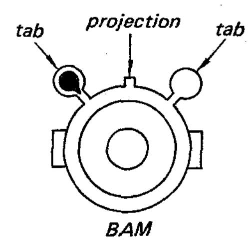


Fig. 3-9.

Note:
1. The two projections are mated with the two tabs.
(It means convergence correcting amount turns to zero.)
2. If the two tabs are not spread in equal amounts opposite direction, dynamic convergence adjustments should be done again.

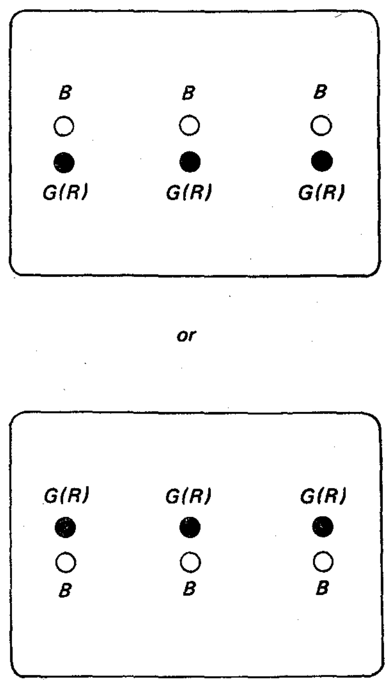


Fig. 3-10.

Dynamic Convergence Adjustments

Adjustment Procedure:

1. Adjust the TILT control (VR604) to obtain the best horizontal convergence at both sides of screen. If correct convergence cannot be obtained, turn the TILT control to display the dot pattern as shown in Fig. 3-11 and Fig. 3-12.
   a. If misconvergence is as shown in Fig. 3-11, reduce the capacitance value of C611. Try the next smaller commercial value. It will probably be necessary to reset the horizontal static convergence control after C611 has been changed. Readjust the tilt control, if necessary.
   b. If misconvergence is as shown in Fig. 3-12, increase the capacitance value of C611. Try the next larger commercial value. It will probably be necessary to reset the horizontal static convergence control after C611 has been changed. Readjust the tilt control, if necessary.

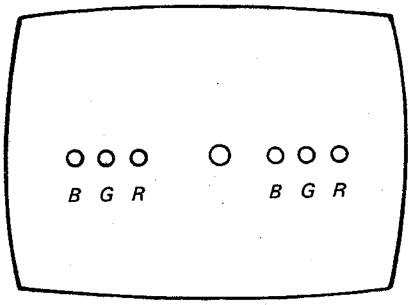


Fig. 3-11.

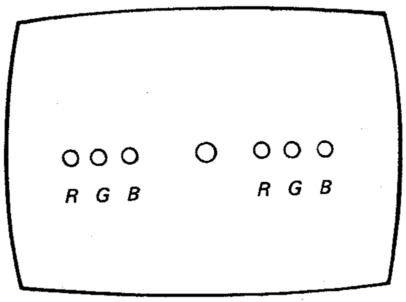


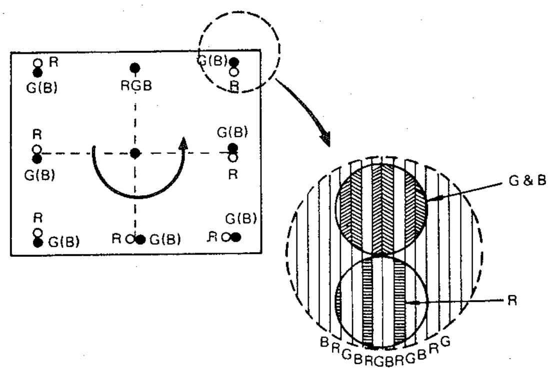
Fig. 3-12.

Screen-edge Convergence Adjustments

Adjustment Procedure:

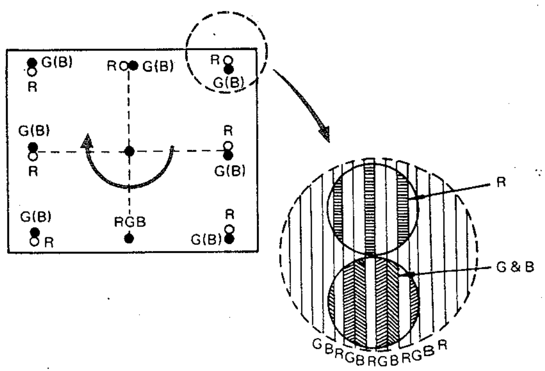
If the conditions shown in Fig. 3-13 and Fig. 3-14 are observed, raise or lower the front edge of the deflection yoke to obtain the best vertical convergence at the screen edges.

Note: Confirm that no mislanding is appeared on the screen. If mislanding is found on the screen, repeat the landing adjustment procedure.



To correct this condition (to move the red dot as indicated by the arrow), raise the front edge of the yoke.

Fig. 3-13.



To correct this condition (to move the red dot as indicated by the arrow), lower the front edge of the yoke.

Fig. 3-14.

Movement of Deflection Yoke

1. Loosen the two screws labeled A and B in Fig. 3-15.
2. Loosen the clamp band labeled C in Fig. 3-16.
3. Raise or lower the front edge of the deflection yoke while taking care not to move the yoke forward or backward.
4. Secure the yoke in position by tightening the screws labeled A and B in Fig. 3-15. Tighten the clamp band.

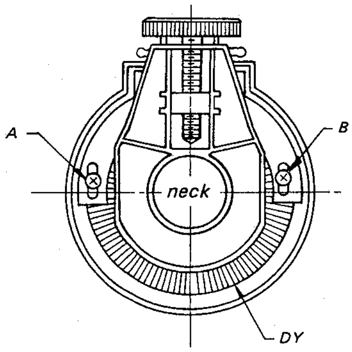


Fig. 3-15.

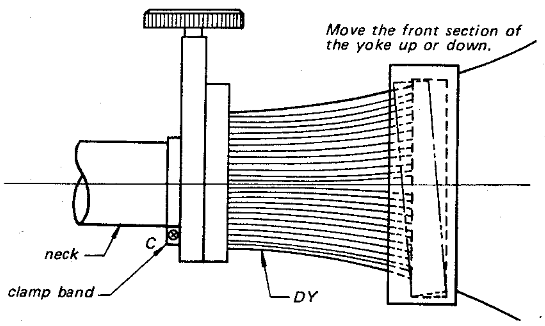


Fig. 3-16.

3-3. WHITE BALANCE ADJUSTMENTS

Preparation:

1. Receive the crosshatch signal from the colour-bar generator.
2. Set the horizontal frequency control VR504 and vertical hold control for correct control.

Adjustment Procedure:

Low-level White Balance Adjustments

1. Turn the brightness control and picture control to the fully counterclockwise position.
2. Turn the screen (SCRN) control VR602 on the P board to obtain a dark screen.
3. Set all three (red, green and blue) background controls (VR456, VR455 and VR454) to the mechanical centre.
4. Turn all three (red, green and blue) drive controls (VR453, VR452 and VR451) to the fully clockwise position (maximum brightness position).
5. Turn the screen control clockwise slowly and note the hue (red, green or blue) of the crosshatches that become faintly visible first.
6. Adjust the two background controls for other two colours to obtain optimum white balance (neutral grey).
7. Turn the brightness and picture controls clockwise about 60 degrees.
8. Confirm that optimum white balance is obtained, and if necessary, readjust the two background controls that was adjusted in step 6 to obtain optimum white balance.

High Level White Balance Adjustments

1. Set the brightness and picture controls to the fully clockwise position.
2. Adjust the all three (red, green and blue) drive controls to obtain optimum white balance.
3. Turn the brightness and picture controls to the fully counterclockwise position.
4. Confirm that optimum white balance is obtained at low level.
5. Repeat the adjustments for low and high level white balance two or three times.

SECTION 4
CIRCUIT ADJUSTMENTS

4-1. VIDEO IF ALIGNMENTS

ITEMS	*PREPARATION & REMARKS*	*ADJUST*	*PROCEDURES*
UHF i-f response curve adjustment	1. Pull out the IF OUT phono plug from UHF tuner. See Fig. 4-1. 2. Connect a sweep generator to UHF IF input terminal through a network shown in Fig. 4-2. 3. Connect a scope to the base of Q752 through a network shown in Fig. 4-3. 4. Loosely couple the output of the marker generator to the output of sweep generator.	UIFT-1 (T751) UIFT-2 (T752)	1. Adjust the output level of sweep generator to obtain 10 mVp-p on the scope. 2. Adjust the two transformers UIFT-1 and UIFT-2 until the picture i-f carrier point is at the same level as the colour-sub-carrier point.

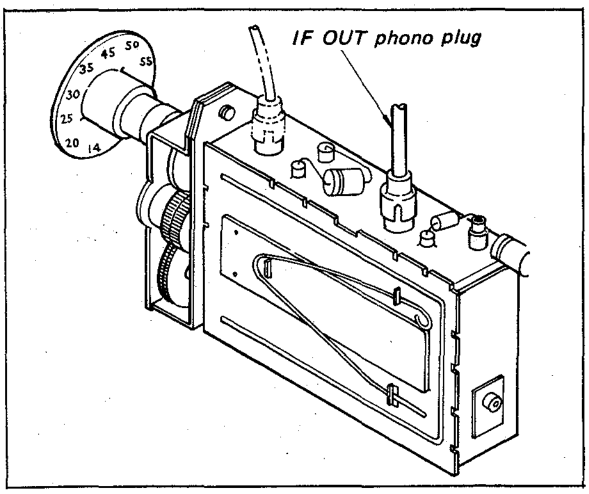


Fig. 4-1.

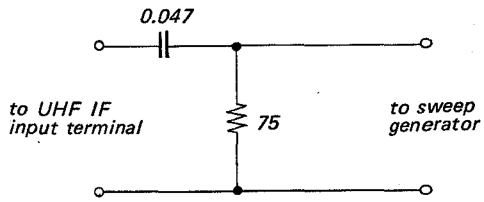


Fig. 4-2.

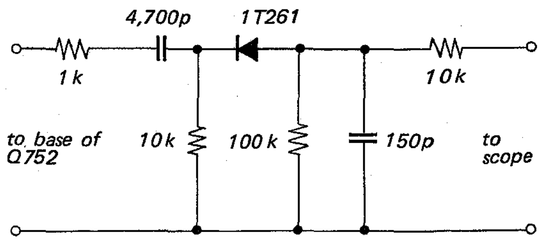


Fig. 4-3.

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
Collector current Ic adjustment of Q201	1. Pull off the uhf phono plug from the uhf tuner. 2. Turn the agc control VR203 fully counterclockwise (maximum gain) as viewed from conductor side. 3. Connect a 100k-ohm rheostat across resistor R250. 4. Connect a sweep generator to the UHF-IF input terminal through an attenuator and the network as shown in Fig. 4-4. 5. Loosely couple the output of the marker generator to the output of sweep generator. 6. Connect a scope to the emitter of Q204.	100k-ohm rheostat	1. Set the 100k-ohm rheostat for the value of 100k ohms. 2. Set the output level of sweep generator to obtain 1.0Vp-p on the scope. 3. Remove the attenuator and then adjust the rheostat to obtain 1.0Vp-p on the scope.
VIFT-2 and VIFT-3 adjustments		VIFT-2 (T205) VIFT-3 (T206)	1. Turn the core of VIFT-2 and VIFT-3 for maximum distance between marker and base-line at the 37.00 MHz marker point.
Adjustment of level of the picture and chroma carriers		VIFT-1 VIFT-3 CV201	1. Adjust VIFT-1 until the 39.50 MHz marker point is at the same level at the 35.07 MHz marker point. 2. Adjust the CV201 and VIFT-3 to position both marker points of 39.50 MHz and 35.07 MHz markers at 50%(6dB) below the peak of curve.
Trap adjustment		VIFT-T1 VIFT-T2 VIFT-T3 VIFT-T4	1. Adjust VIFT-T1, VIFT-T2, VIFT-T3 and VIFT-T4 to obtain a standard response curve as shown in Fig. 4-5. VIFT-T1 : 41.50 MHz VIFT-T2 : 33.50 MHz VIFT-T3 : 31.50 MHz VIFT-T4 : 33.50 MHz
		VR202	2. Adjust VR202 for minimum distance between 33.50 MHz marker and base-line on the response curve. 3. Repeat the above items two or three times.
Overall check		VIFT-2 VIFT-3 100k-ohm rheostat	1. Confirm that the top of the curve moves up and down* by turning the cores of VIFT-2 and VIFT-3. (* top of waveform tilts to right or left.)

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
			2. If the curve does not tilt, readjust the above items. 3. Change the output level of the sweep generator while keeping the emitter output level of Q204 at 1.0 Vp-p constant with the 100k-ohm rheostat. 4. Confirm that the tilt of curve does not exceed the following value. Difference of level between picture carrier (39.50 MHz) and chroma carrier (35.07 MHz) . . . within 20% Tilt of top of curve . . . within 30%

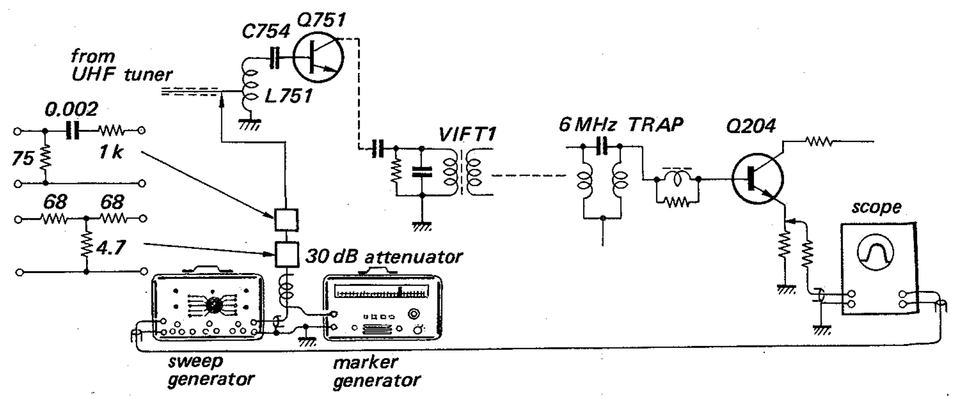


Fig. 4-4.

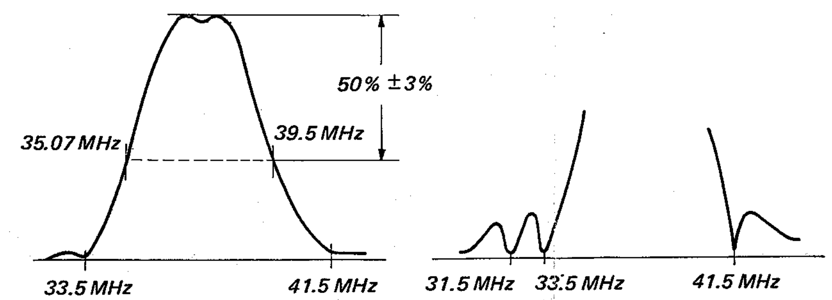


Fig. 4-5.

 KV-1320UB

ITEMS	*PREPARATION & REMARKS*	*ADJUST*	*PROCEDURES*
Detector output adjustment	1. Remove the 100 k-ohm rheostat. 2. Push in the UHF-IF phono plug to UHF tuner. 3. Connect a scope to the emitter of Q204. 4. Receive a strong off-the-air signal (55 ~ 75 dB).	VR203	1. Adjust the agc control VR203 to obtain 1.4 Vp-p from black level to white level.
Tuner agc adjustment		VR201	1. Receive an off-the-air signal. 2. Adjust the tuner agc control VR201 for minimum noise (snow) and crossmodulation. Check each channel. Check operation with strong local signals.
6.0 MHz trap adjustment	1. Receive an off-the-air signal. 2. Set the AFT switch to OFF position. 3. Set the UHF tuner knob for just tuning position, then turn it clockwise little by little to obtain 6.0 MHz beat clearly.	T209	1. Adjust T209 to minimize the 6.0 MHz beat on the screen.

4-2. SOUND IF ALIGNMENTS

ITEMS	*PREPARATION & REMARKS*	*ADJUST*	*PROCEDURES*
SIFT-1 and SIFT-2 adjustments	1. Turn the volume control VR901 fully counterclockwise. 2. Connect a 100 k-ohm rheostat across R250, and set the 100 k-ohm rheostat to make all video disappear from the picture tube (blank raster). 3. Connect a scope to the hot terminal of volume control VR901. 4. Connect a sweep generator to the junction point of L211 and C250 through the network shown in Fig. 4-6. 5. Loosely couple the marker generator to the output lead of the sweep generator.	SIFT-1 SIFT-2	1. Set the marker generator to 6.0 MHz. 2. Turn up the sweep output to produce an S curve. 3. Adjust the cores of SIFT-1 and SIFT-2 for maximum deflection and to make the S curve symmetrical on the scope.
SIFT-3 adjustment	1. Remove the 100 k-ohm rheostat which is connected across R250. 2. Receive the off-the-air signal. 3. Connect a VOM between the terminals 5 and 6 of IC-201.	SIFT-3	1. Turn the core of SIFT-3 to obtain 0 V on the VOM.

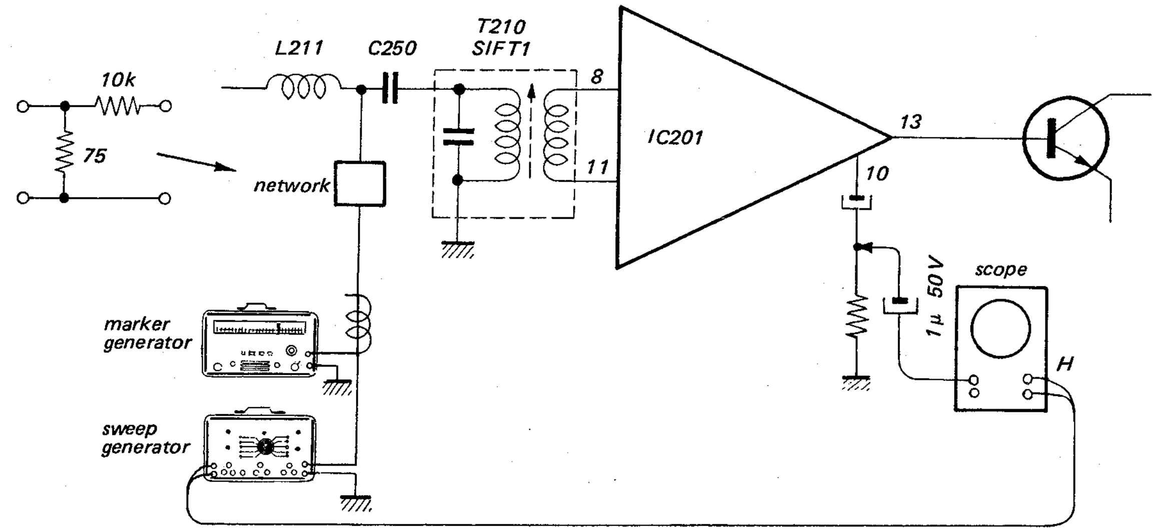


Fig. 4-6.

4-3. AUTOMATIC FINE TUNING (AFT) ADJUSTMENTS

There are two service methods in the AFT adjustments. One is Factory Service method and the other is Field Service Method.

Field Service Method

ITEMS	*PREPARATION & REMARKS*	*ADJUST*	*PROCEDURES*
AFT adjustment	1. Receive the off-the-air signal with reasonable signal to noise (S/N) ratio. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Adjust brightness and picture controls to obtain the best picture. 4. Set the AFT switch to OFF position.	T152	1. Turn the UHF tuner knob clockwise to obtain 1.57 MHz beat on the screen. 2. Eliminate 1.57 MHz beat stripe by turning the UHF tuner knob counterclockwise slowly. 3. Set the AFT switch to ON position. 4. Adjust T152 to eliminate 1.57 MHz beat stripe at the same tuning point on step 2.

Factory Service Method

ITEMS	*PREPARATION & REMARKS*	*ADJUST*	*PROCEDURES*
T152 adjustment	1. Set the channel selector to the inactive channel. 2. Connect antenna input terminal to ground with short jumper wire. 3. Set the AFT switch to OFF position.	T152	1. Connect a scope to terminal 8 on AFT block. See Fig. 4-7. 2. Turn up sweep output to produce an S curve at 39 MHz. 3. Set the marker generator to 39.50 MHz.

ITEMS	*PREPARATION & REMARKS*	*ADJUST*	*PROCEDURES*
	4. Connect a sweep generator to the UHF-IF input terminal. 5. Loosely couple the marker generator to the output lead of the sweep generator.		4. Adjust the core of T152 until 39.50 MHz marker point positions at the centre of S curve.
T151 adjustment		T151	1. Connect a scope to the emitter of Q204. 2. Set the marker generator to 39.50 MHz. 3. Adjust the sweep output level until 39.50 MHz marker point indicates 0.4 ~ 0.6 V(p-p) on the scope. See Fig. 4-8. 4. Change the connection of scope to terminal 8 on AFT block. 5. Adjust the core of T151 for maximum deflection and to make the S curve symmetrical on the scope. See Fig. 4-9. 6. Decrease the output level of sweep generator by about 10 dB. 7. Adjust the core of T151 for maximum deflection and to make the S curve symmetrical on the scope. 8. Increase sweep output level by about 10 dB, and make sure that the S curve does not change. 9. Change the connecting point of scope to terminal 7 on AFT block. 10. Make sure that opposite S curve is obtained on the scope. If it is not obtained, readjust the core of T151.

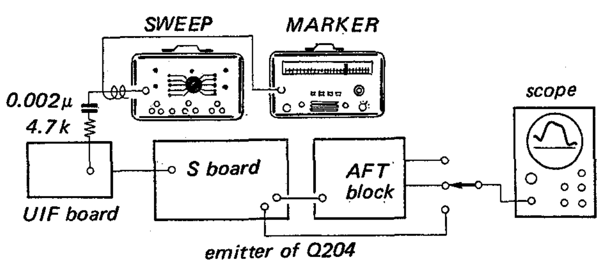


Fig. 4-7.

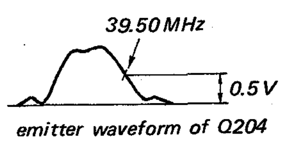


Fig. 4-8.

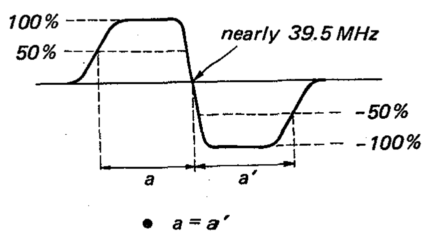
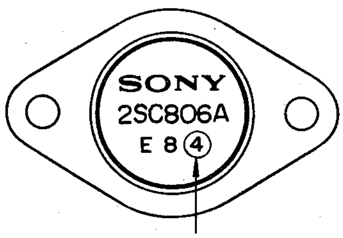
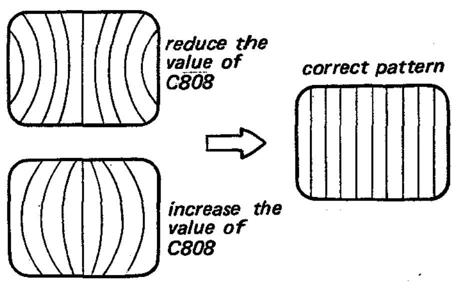


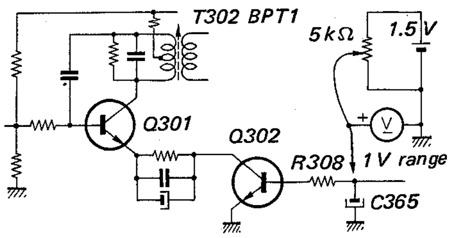
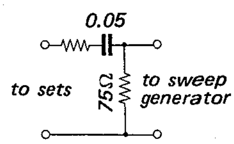
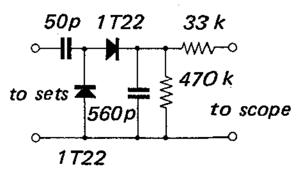
Fig. 4-9.

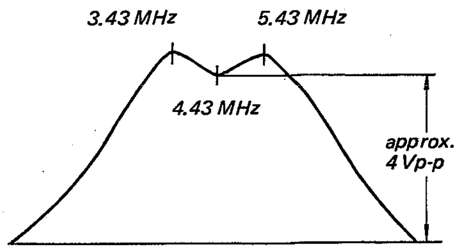
4-4. DEFLECTION CIRCUIT ADJUSTMENTS

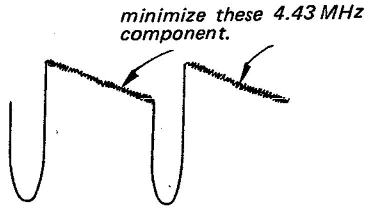
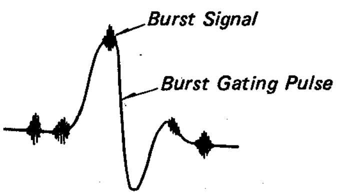
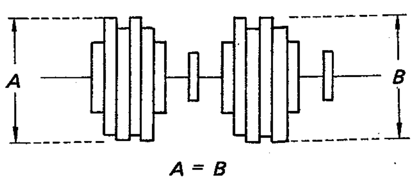
<table>
<tr><th>ITEMS</th><th>PREPARATION & REMARKS</th><th>ADJUST</th><th>PROCEDURES</th></tr>
<tr><td>115V line adjustment</td><td>1. Receive an off-the-air signal.
2. Set the vertical hold and horizontal frequency controls for correct sync.
3. Set the brightness and picture controls to obtain optimum picture on the screen.
4. Connect a VOM to the terminal 17 on the P board (115V line).</td><td>VR601</td><td>1. Adjust VR601 to obtain 113V to 117V on the VOM.</td></tr>
<tr><td>Horizontal frequency & HSC adjustment</td><td>1. Receive an off-the-air signal.
2. Short the base of sync split Q503 to ground with a 0.05μF capacitor.
3. Set the picture and brightness controls for optimum picture.
4. Short-circuit horizontal stabilizing coil HSC.</td><td>VR504
(H. FREQ)
L501
(HSC)</td><td>1. Turn VR504 to obtain a single upright picture that "floats" from side to side or note the two settings that produce equal numbers of slanting bars and set VR504 in the centre of these settings.
2. Remove the short-circuit from HSC.
3. Adjust the HSC to give a slowly moving picture in horizontal direction. Disconnect the 0.05μF capacitor which is connected between base of Q503 and ground. Confirm that the picture is locked on the screen.</td></tr>
<tr><td>Horizontal pulse width adjustment</td><td>1. Receive an off-the-air signal.
2. Connect a scope to the emitter of Q504.</td><td>C525</td><td>1. Select values for C525 to obtain the pulse width of 11.5 to 12.5 μ sec.</td></tr>
<tr><td>Horizontal output and horizontal converter drive adjustment</td><td>
hFE rating mark</td><td>R540
R541</td><td>If a horizontal output transistor has been replaced, change R540 according to the h_{FE} rating of transistor as shown in the table below.
<table>
<tr><th>Q801 h_{FE} rating</th><th>R540</th></tr>
<tr><td>-4</td><td>27</td></tr>
<tr><td>2SC806A-5</td><td>33</td></tr>
<tr><td>-6</td><td>43</td></tr>
<tr><td>-7</td><td>43</td></tr>
</table>
If a horizontal converter transistor has been replaced, change R541 according to the h_{FE} rating of transistor as shown in the table below.
<table>
<tr><th>Q802 h_{FE} rating</th><th>R541</th></tr>
<tr><td>-4</td><td>27</td></tr>
<tr><td>2SC806A-5</td><td>33</td></tr>
<tr><td>-6</td><td>43</td></tr>
</table></td></tr>
</table>

ITEMS	*PREPARATION & REMARKS*	*ADJUST*	*PROCEDURES*
Horizontal centring adjustment	1. Receive the test pattern signal. 2. Adjust vertical hold and horizontal frequency controls for correct sync. 3. Set the brightness and picture controls to obtain optimum picture on the screen.	VR603	1. Adjust the horizontal centring control VR603 to the centre of pattern at the centre of screen.
Horizontal size adjustment		L601	1. Adjust L601 until outside circle of test pattern are in contact with the edge of picture tube.
Focus adjustment	1. Receive an off-the-air signal. 2. Set the vertical hold and horizontal frequency controls for correct sync. 3. Set the brightness and picture controls to obtain optimum picture on the screen.		1. Try to connect the focus lead (white) at each of the connecting points on the P board. 2. Connect permanently at the point where gives best focus.
Vertical bias adjustment	1. Receive the test pattern signal. 2. Set the vertical hold and horizontal frequency controls for correct sync. 3. Set the brightness and picture controls to fully counterclockwise position.	VR503	1. Connect a VOM to the emitter of Q901. 2. Adjust VR503 to obtain 7.0V on the VOM.
Vertical centring adjustment		VR605	1. Adjust VR605 to locate the centre of picture at the centre of the screen while observing the picture.
Vertical height and linearity adjustment		VR501 VR502	1. Adjust the vertical height control VR501 and linearity control VR502 for optimum height and linearity.
Pincushion correction adjustment	1. Receive a crosshatch signal from colour-bar generator. 2. Set the vertical hold and horizontal frequency controls for correct sync. 3. Adjust the brightness control until the crosshatch becomes faintly visible on the screen. 4. Set the picture control to fully counterclockwise position (minimum position).	C808	1. Select the value of C808 for the best picture. See Fig. 4-10.  *Fig. 4-10.*

4-5. COLOUR CIRCUIT ADJUSTMENTS

ITEMS	*PREPARATION & REMARKS*	*ADJUST*	*PROCEDURES*
TOT adjustment	1. Set the channel selector to the highest inactive channel in the area. 2. Short the base of the colour killer amplifier Q316 to ground with a short jumper wire. 3. Connect a dc bias box to the base of ACC transistor Q302. 4. Adjust the dc bias box to supply 0.7 V to the base of Q302 shown in Fig. 4-11. 5. Set the AFT switch to OFF position.	TOT (T301)	1. Connect a sweep generator to primary of TOT through a network shown in Fig. 4-12. 2. Loosely couple the marker generator to the output lead of sweep generator. 3. Connect a scope to the secondary of BPT-1 (T302) through a network shown in Fig. 4-13. 4. Adjust the core of take-off transformer TOT for maximum displacement between the 6.0 MHz marker point and the base-line.  *Fig. 4-11.*  *Fig. 4-12.*  *Fig. 4-13.*
BPT-1 adjustment		BPT-1 (T302)	1. Connect a sweep generator to the base of bandpass amplifier Q301 through a network shown in Fig. 4-12. 2. Connect a scope to the secondary of BPT-1 through a network shown in Fig. 4-13. 3. Adjust the 1st bandpass transformer BPT-1 for maximum distance between the 4.2 MHz marker point and the base-line.

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
BPT-2 adjustment	1. Set the channel selector to the highest inactive channel in the area. 2. Short the base of colour killer amplifier Q316 to ground with a short jumper wire. 3. Connect a dc bias box to the base of ACC transistor Q302. 4. Adjust the dc bias box to supply 0.7 V to the base of Q302 shown in Fig. 4-11. 5. Set the AFT switch to OFF position. 6. Turn the picture control fully clockwise and colour control to midrange. 7. Connect a sweep generator to the terminal 7 on DC board through a network shown in Fig. 4-12. 8. Connect a scope to secondary of 2nd bandpass transformer BPT-2 through a network shown in Fig. 4-13.	BPT-2 (T307)	1. Adjust the core of BPT-2 to obtain the response curve shown in Fig. 4-14.  *Fig. 4-14.*
ACC adjustment	1. Receive the colour-bar signal from the colour-bar generator. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Connect a scope to the emitter of Q204. 4. Connect another scope to the secondary of 1st bandpass transformer BPT-1.	VR302 (ACC)	1. Adjust the colour-bar generator to produce a burst signal of 0.2 V(p-p) on the scope at emitter of Q204. 2. Adjust ACC control (VR-302) to produce a colour burst signal of 0.5 V(p-p) at the secondary of BPT-1.
4.43 MHz oscillator adjustment	1. Receive the colour-bar signal from the colour-bar generator. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Set the hue control VR905 to the mechanical centre.	COT-1 (T304)	1. Short the base of Q314 to ground with short jumper. 2. Adjust the core of COT-1 to synchronize the colour in the display and for minimum colour beat in the picture.
		COT-2 (T306)	1. Short the base of Q310 to ground with short jumper. 2. Adjust the core of COT-2 to synchronize the colour in the display and for minimum colour beat in the picture. Perform the adjustment of COT-1 and COT-2 several times.

ITEMS	*PREPARATION & REMARKS*	*ADJUST*	*PROCEDURES*
4.43 MHz trap coil adjustment	1. Receive the colour-bar signal from the colour-bar generator. 2. Set the vertical hold and the horizontal frequency controls for correct sync. 3. Turn the colour control knob fully counterclockwise and the picture control knob fully clockwise. 4. Connect a scope to the emitter of Q452 (Y DRIVE).	L451 (4.43 MHz trap)	1. Adjust the trap coil L451 to minimize 4.43 MHz component on the waveform shown in Fig. 4-15.  *Fig. 4-15.*
Burst amplifier adjustment	1. Receive the colour-bar signal from the colour-bar generator. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Connect a scope to the base of burst amplifier (Q308 and Q312) and check that the burst signal rides around atop the burst gate pulse as shown in Fig. 4-16. 4. Connect a dc bias box across capacitor C308.  *Fig. 4-16.*	VR301	1. Connect a scope to the secondary of 1st burst amp transformer BAT-1. 2. Adjust the dc bias box until the burst signal is obtained less than 10 V(p-p) waveform on the scope. 3. Adjust the core of BAT-1 to obtain maximum burst signal on the scope. 4. Connect a scope to the secondary of the 2nd burst amp transformer BAT-2. 5. Adjust the core of BAT-2 to obtain maximum burst signal on the scope.
Delay level adjustment	1. Receive the colour-bar signal from the colour-bar generator. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Set the hue control VR905 to the mechanical centre. 4. Turn the colour control fully clockwise, and then turn it counterclockwise about 90 degrees. 5. Connect a scope to the secondary of 2nd bandpass transformer BPT-2.	BAT-1 (T303) BAT-2 (T305)	1. Adjust VR301 to obtain the same level between direct colour signal and 1-H delayed colour signal. See Fig. 4-17.  *Fig. 4-17.*

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
Hue adjustment	1. Receive the colour-bar signal from the colour-bar generator. 2. Adjust the vertical hold and horizontal frequency controls for correct sync. 3. Set the hue control VR905 to the mechanical centre. 4. Turn the colour control fully clockwise, and then turn it counterclockwise about 90 degrees.	BAT-1 (T303) BAT-2 (T305) DAC (L301)	1. Connect a scope to the base of Q320. 2. Adjust L301 to obtain the same amplitude level between direct colour signal and 1-H delayed colour signal. 3. Adjust the 2nd burst amp transformer BAT-2 to obtain R-Y waveform as shown in Fig. 4-18. 4. Connect a scope to the base of Q318. 5. Adjust the 1st burst amp transformer BAT-1 to obtain B-Y waveform as shown in Fig. 4-18. 6. Repeat steps 1 to 5 two or three times for best waveform.

Note: The hue adjustment has a great effect on both delay level adjustment and burst amp adjustment. Therefore, perform the adjustment in following order.

1. burst amp
2. delay level
3. hue adjustment

Hue control range check		HAT (T951)	1. Check that the optimum colour-bar picture appears on the screen as shown in Fig. 4-19. If the optimum colour-bar picture is not appeared on the screen, adjust the core of HAT slightly.

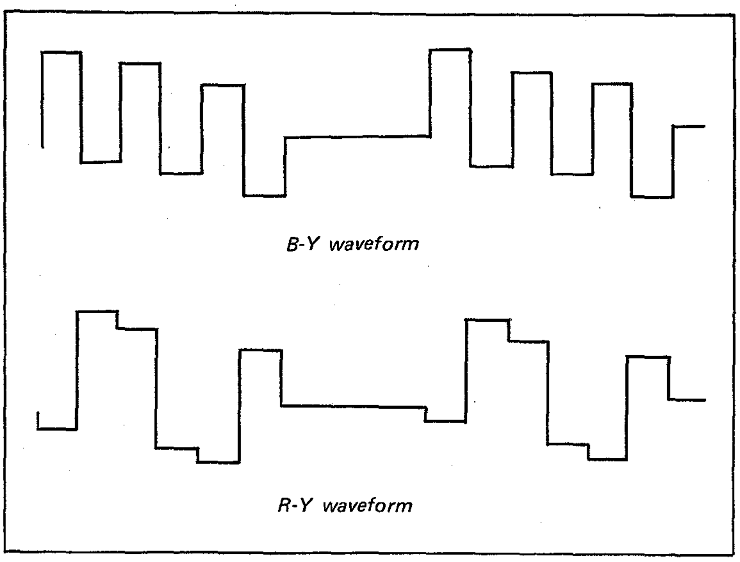


Fig. 4-18.

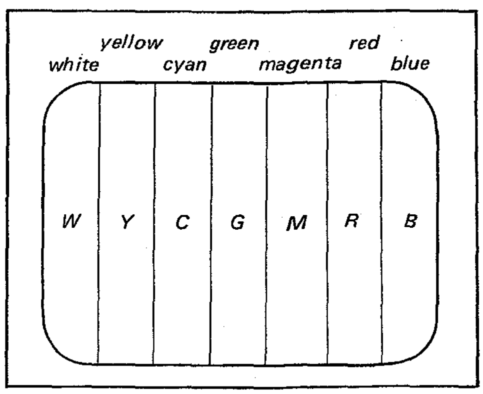


Fig. 4-19.

ITEMS	PREPARATION & REMARKS	ADJUST	PROCEDURES
ID adjustment	1. Receive the colour-bar signal from the colour-bar generator. 2. Connect a bias box to the base of Q702, and supply 0.5 V to 0.7 V. 3. Turn VR702 fully counterclockwise position as viewed from conductor side.	T701 (BAT-3) T701 T702	1. Connect a scope to secondary of T701. 2. Adjust T701 until the burst signal indicates maximum amplitude on the scope. 3. Connect a scope to the base of Q704. 4. Connect a trigger input terminal of scope to primary of vertical output transformer VOT. 5. Adjust VR701 to obtain 4V(p-p) on the scope. 6. Adjust VR702 until the 2nd keying pulse counted from left is located at the same position of positive differential pulse shown in Fig. 4-20.

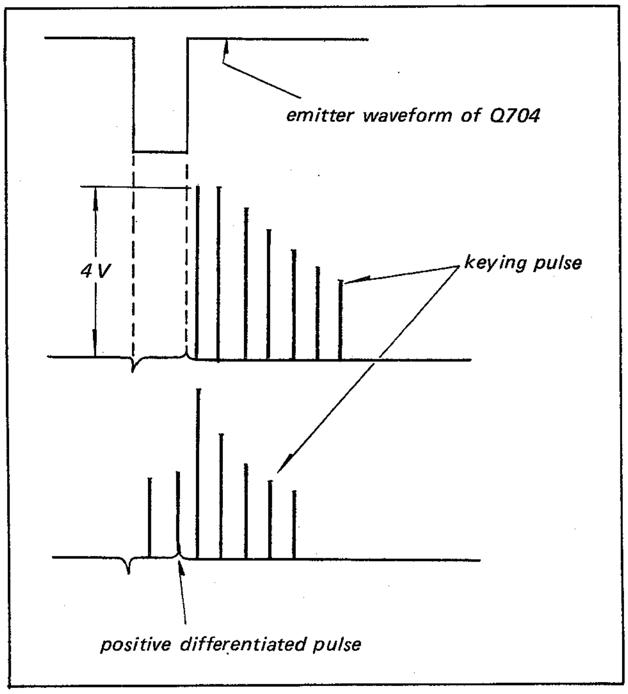
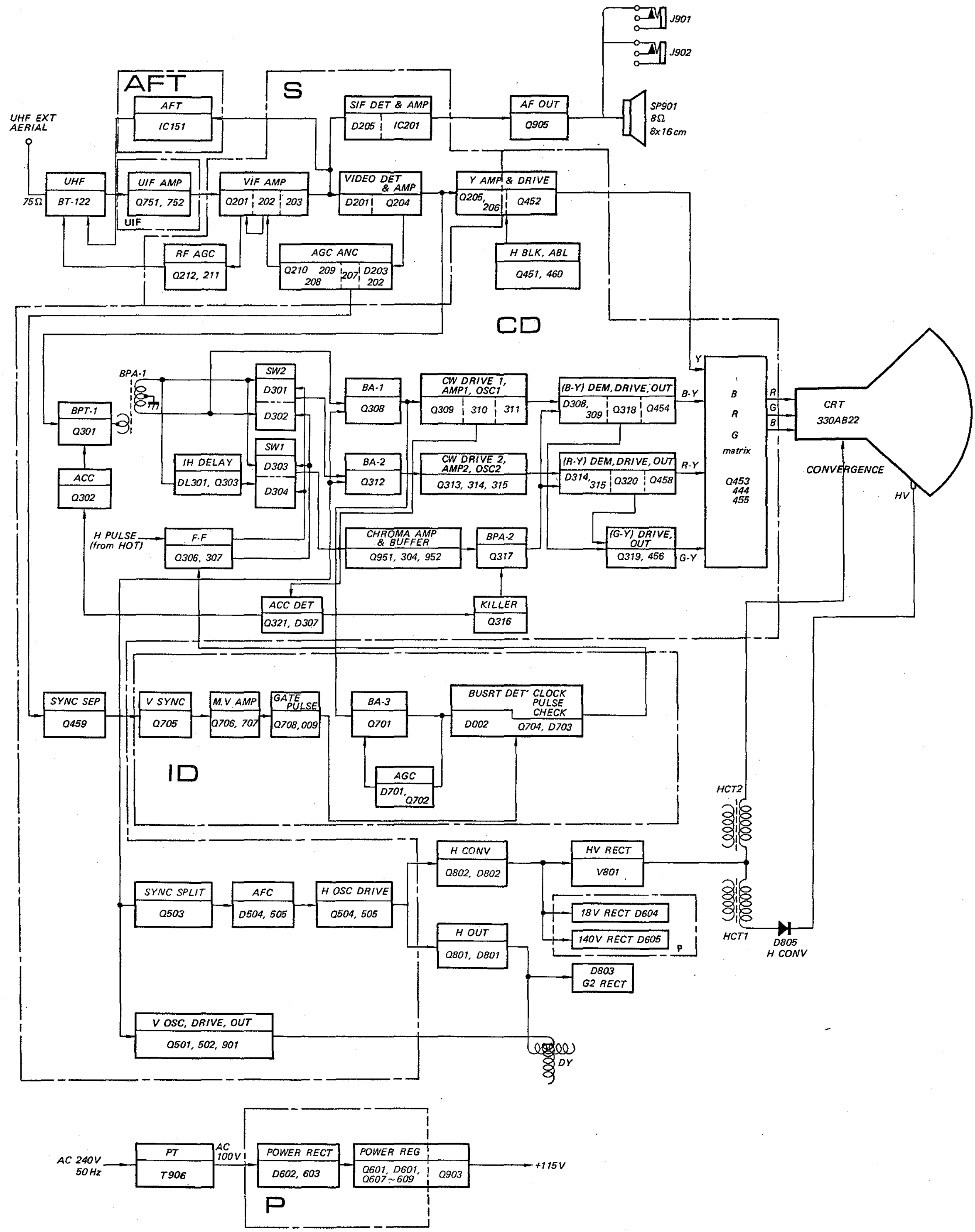


Fig. 4-20.

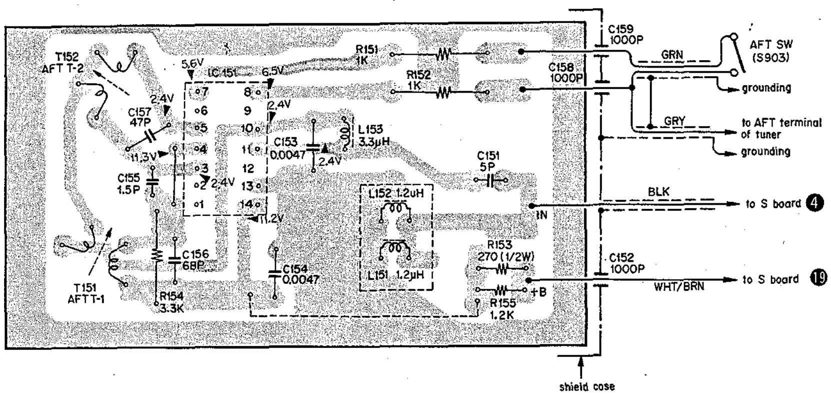
BLOCK DIAGRAM



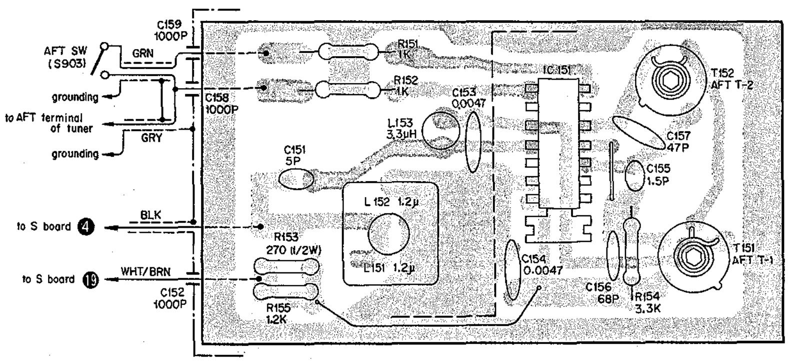
MOUNTING DIAGRAM

AFT Circuit Board

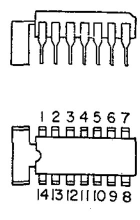
– Conductor Side –



– Component Side –



1C151



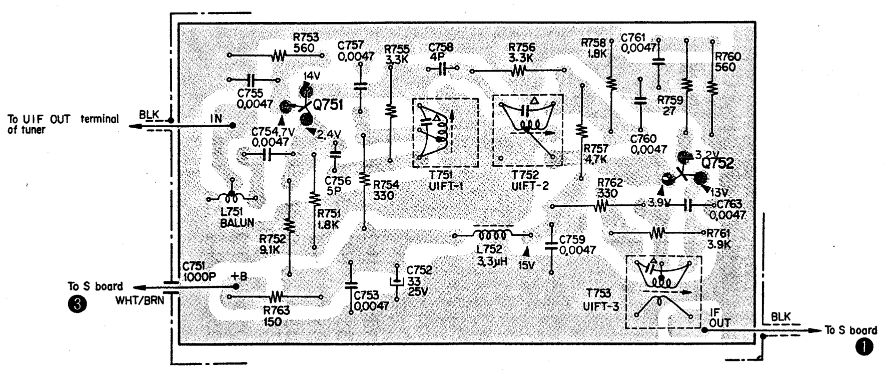
bottom view

 KV-1320UB

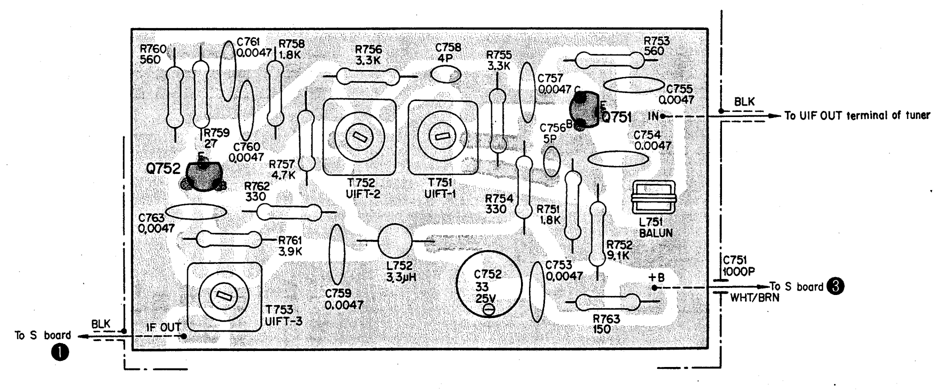
MOUNTING DIAGRAM

UIF Circuit Board

– Conductor Side –



– Component Side –



Q751
Q752 **2SC1128**

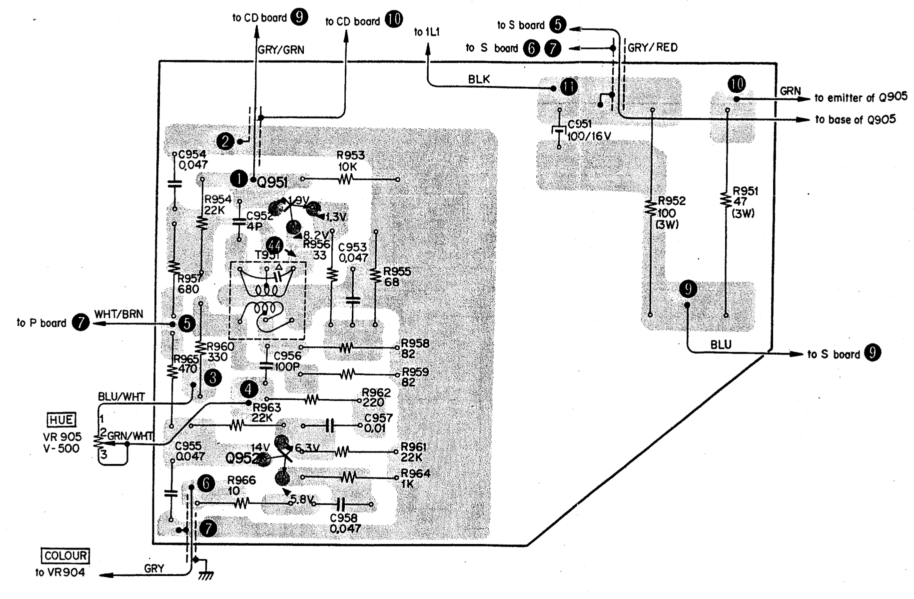


Note: △ marks show the internal components of transformers.

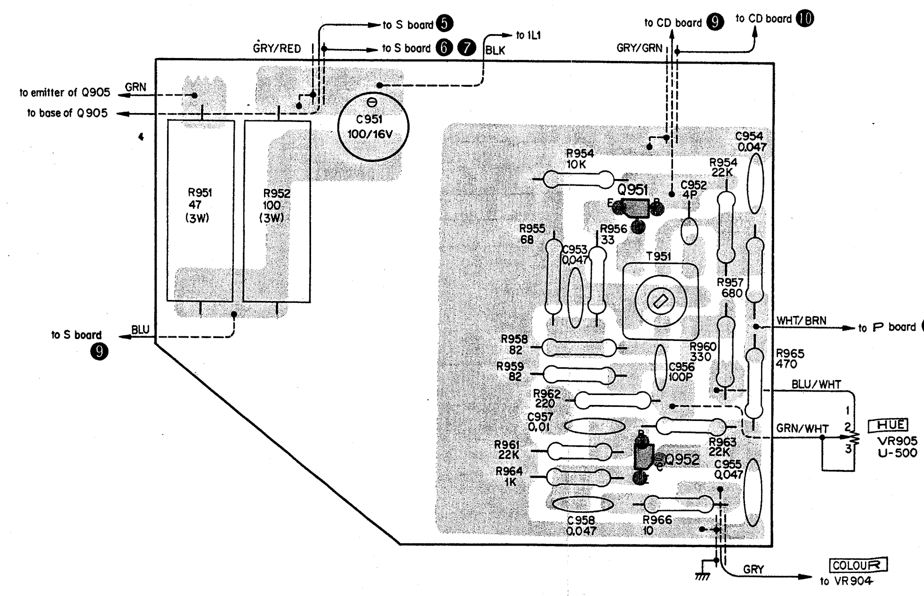
MOUNTING DIAGRAM

HA Circuit Board

– Conductor Side –



– Component Side –



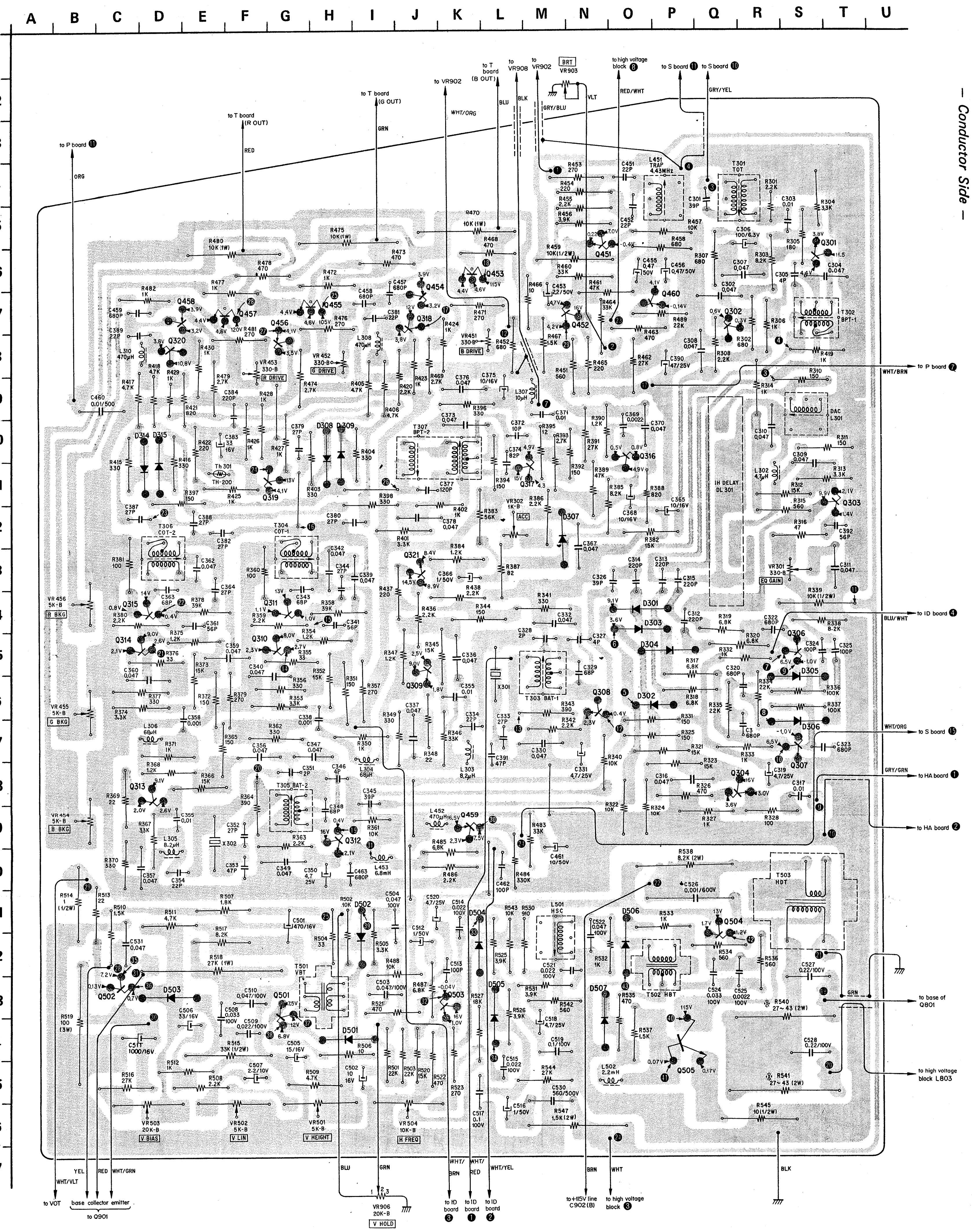
Q951
Q952 **2SC403C**



MOUNTING DIAGRAM

CD Circuit Board

– Conductor Side –



TRANSISTORS

Q301	S-6	2SC403B
Q302	Q-7	2SC633A
Q303	T-11, 12	2SC403B
Q304	Q-18	2SC403C
Q305		discarded
Q306	S-15	2SC633A
Q307	S-17	2SC633A
Q308	N-16	2SC403C
Q309	J-15	2SC403B
Q310	G-15	2SC403B
Q311	G-14	2SC403C
Q312	H-19	2SC403C
Q313	D-18	2SC403B
Q314	D-15	2SC403B
Q315	D-14	2SC403C
Q316	O-11	2SC633A
Q317	M-11	2SC403C
Q318	J-7	2SC633A
Q319	G-11	2SC633A
Q320	D-8	2SC633A
Q321	J-13	2SC633A
Q451	N-5	2SC633A
Q452	M, N-7	2SC633A
Q453	K-6	2SC1127
Q454	J-7	2SA678
Q455	G, H-7	2SC1127
Q456	G-8	2SA678
Q457	E, F-7	2SC1127
Q458	D, E-7	2SA678
Q459	K-19	2SA678
Q460	O-7	2SC633A
Q501	G-23	2SC633A
Q502	C-23	2SC633A
Q503	K-23	2SC633A
Q504	Q-21, 22	2SC403A
Q505	P-24	2SC867

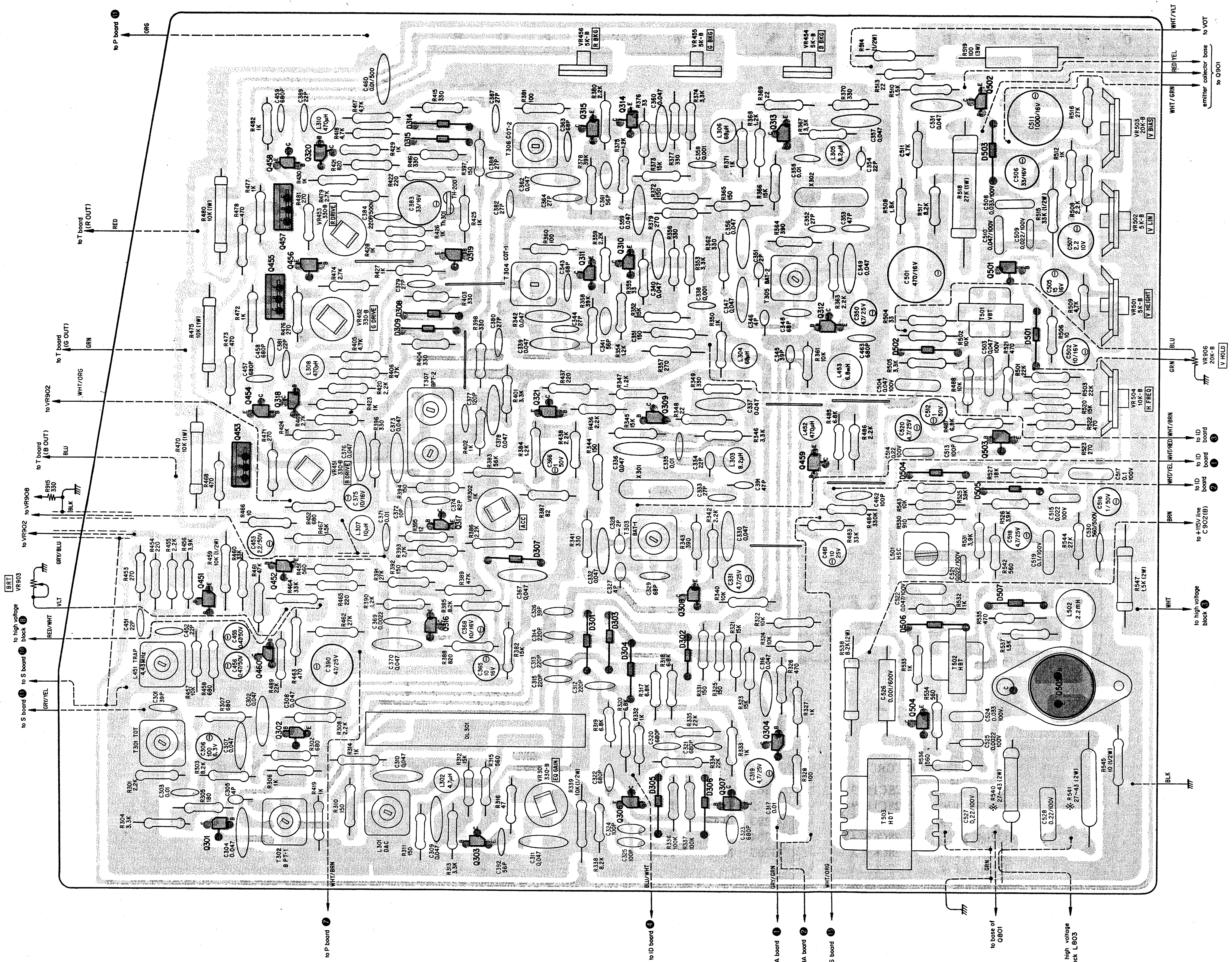
DIODES

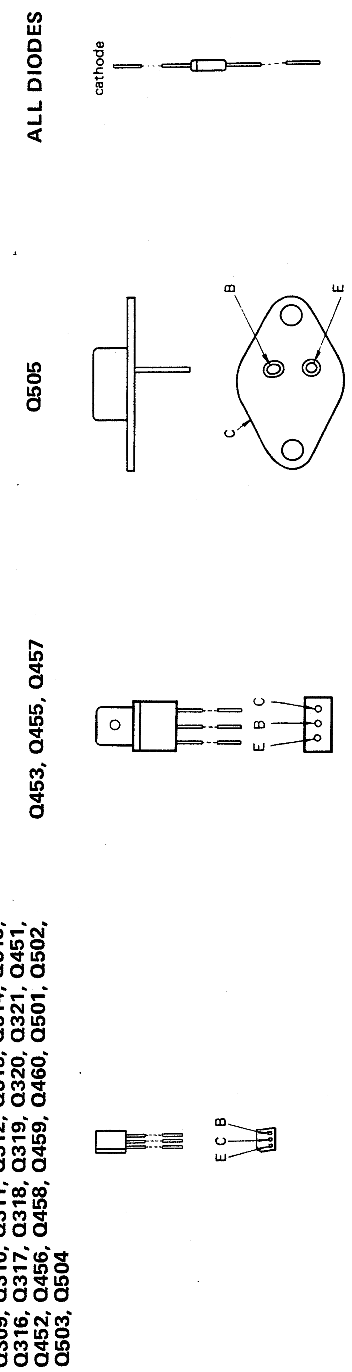
D301	D-14	1T40
D302	O, P-16	1T40
D303	O-14	1T40
D304	P-15	1T40
D305	S-16	1T40
D306	S-17	1T40
D307	M-12, 13	1T40
D308	H-10, 11	1T40
D309	H-10, 11	1T40
D314	D-10, 11	1T40
D315	D-10, 11	1T40
D501	H-24	1T40
D502	I-21, 22	1T40
D503	D-23	1T40
D504	K-21, 22	1T22A
D505	L-23, 24	1T22A
D506	O-21, 22	1T40
D507	N-23, 24	1T40

Note: Resistance values marked ※ are to be selected to yield specified operating conditions.

CD Circuit Board

– Component Side –

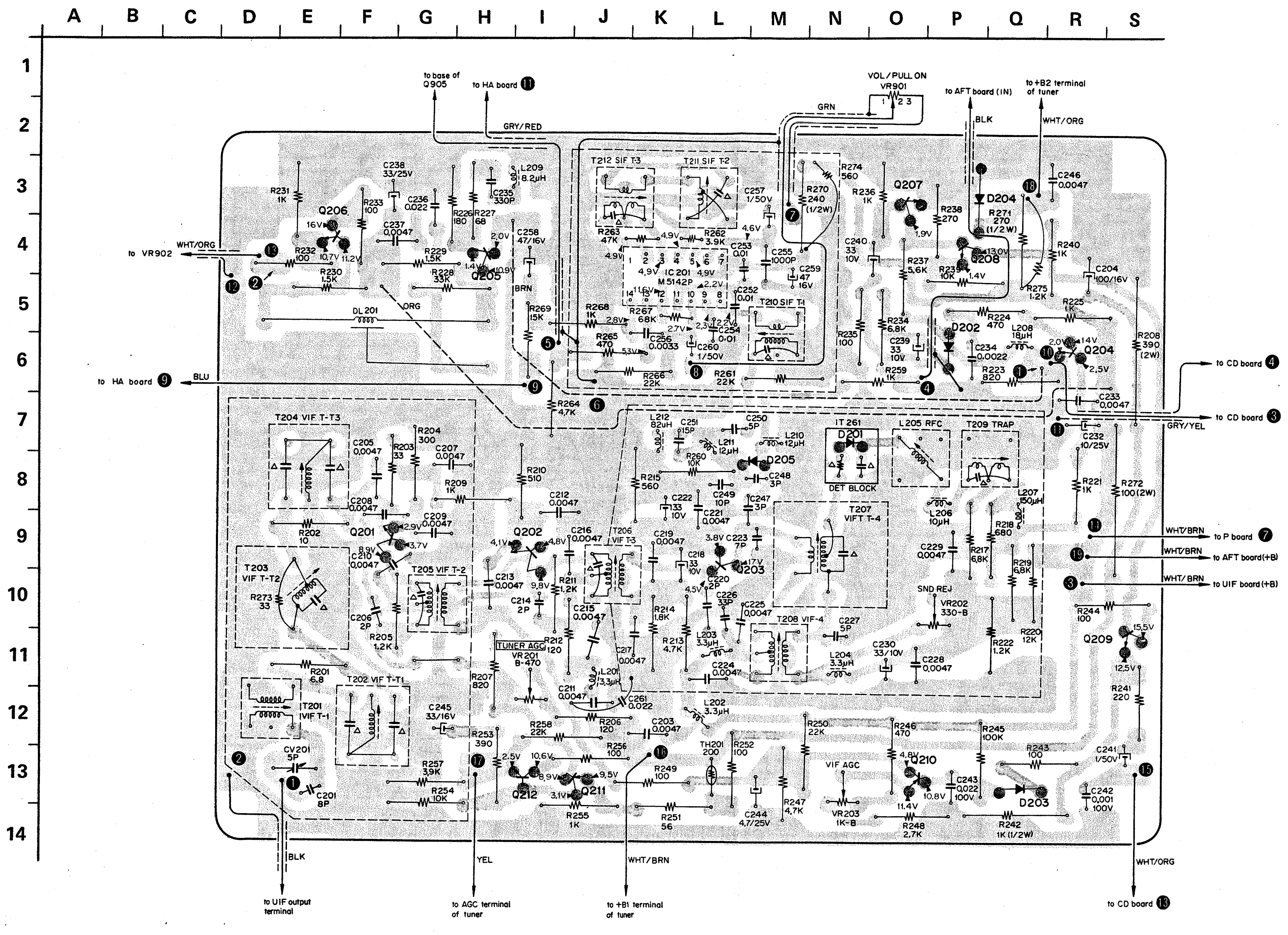




MOUNTING DIAGRAM

S Circuit Board

– Conductor Side –



TRANSISTORS		
Q201	F-9	2SC1129
Q202	I-9	2SC1129
Q203	L-9	2SC1128
Q204	R-6	2SC633A
Q205	H-4	2SC633A
Q206	E-4	2SC633A
Q207	O-3	2SC633A
Q208	P-4	2SC633A
Q209	S-11	2SC633A
Q210	O-13	2SA678
Q211	J-13	2SA678
Q212	I-13	2SC633A

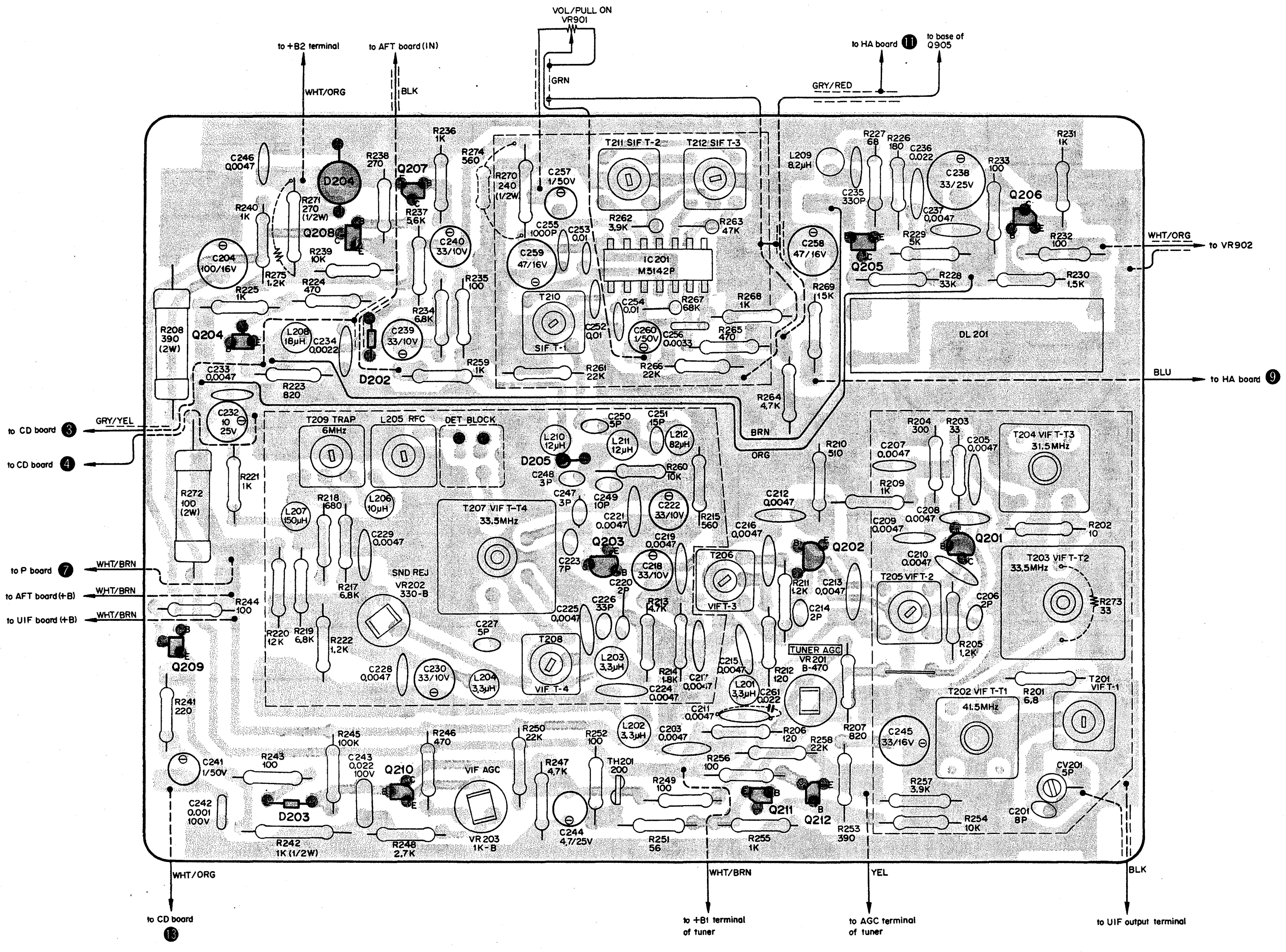
DIODES		
D201	N-7	1T261
D202	P-6	1T40
D203	Q-13	1T40
D204	P-3	ZB1-11
D205	M-8	1T261

Note: △ marks show the internal components of transformers.

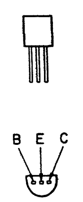
 KV-1320UB

S Circuit Board

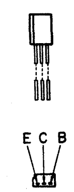
– Component Side –



Q201, Q202, Q203



Q204, Q205, Q206, Q207, Q208, Q209, Q210, Q211, Q212



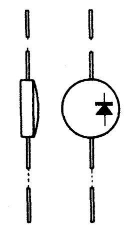
D201, D202, D203, D205

cathode



D204

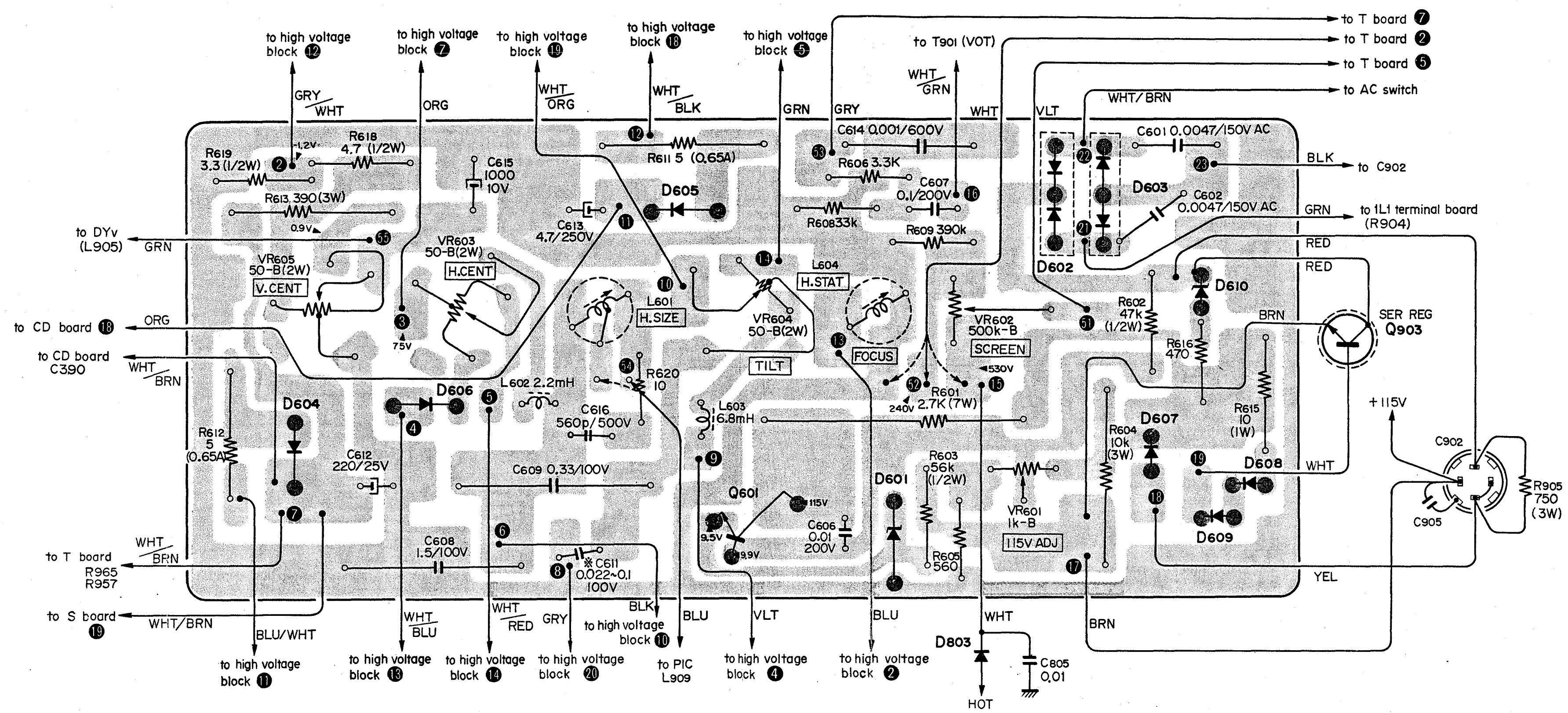
cathode



MOUNTING DIAGRAM

P Circuit Board

– Conductor Side –



TRANSISTOR

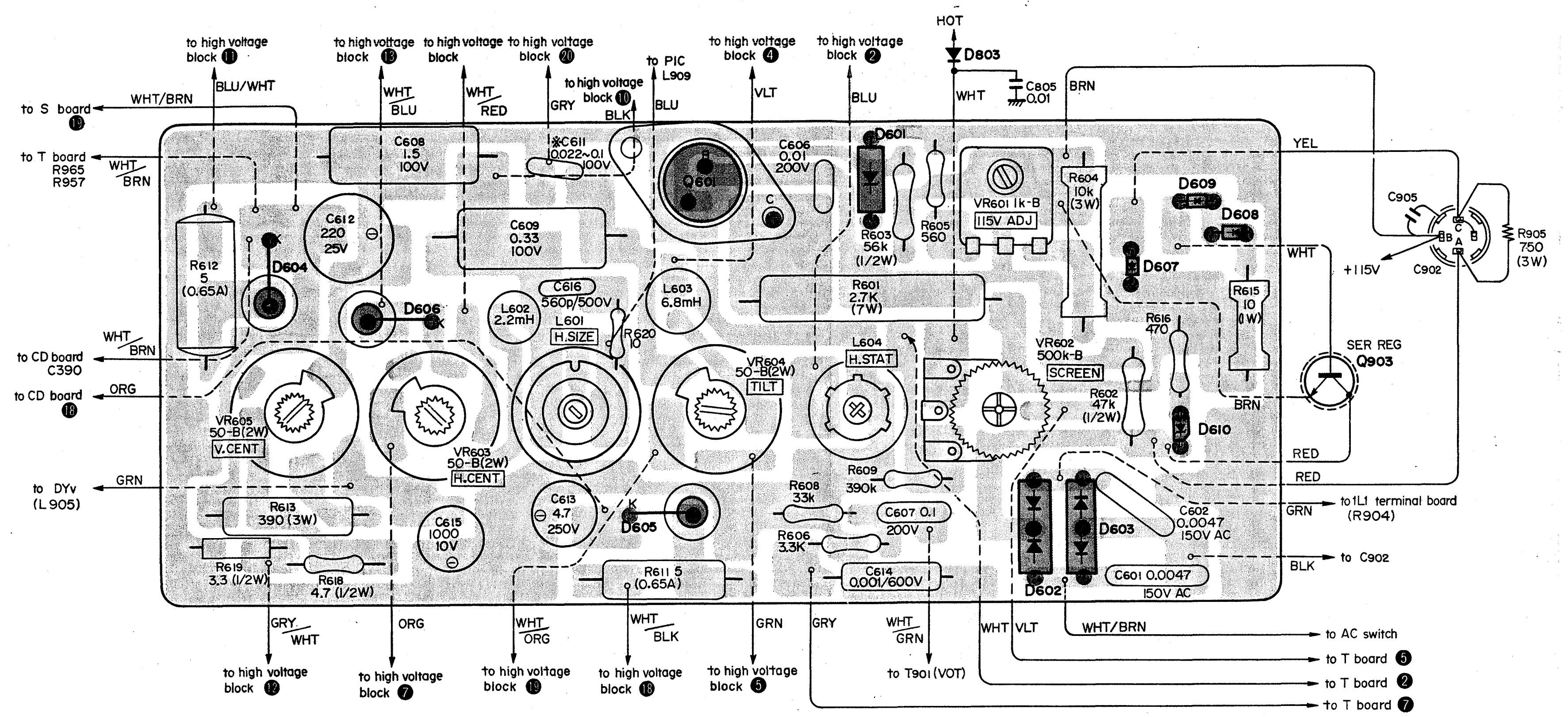
Q601	2SC867

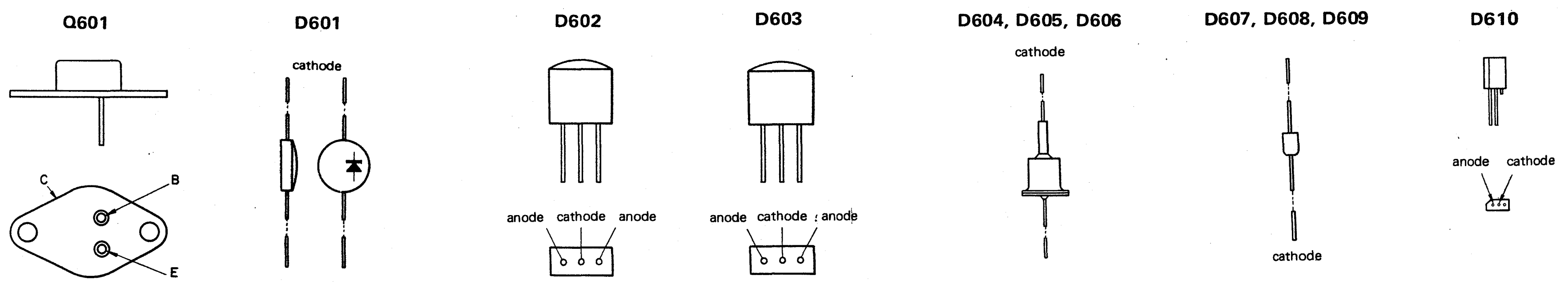
DIODES

D601	ZB1-11
D602	CD-4
D603	CDR-4
D604	SB-2
D605	SB-2
D606	SB-2
D607	10D05
D608	10D05
D609	10D05
D610	1T264

P Circuit Board

– Component Side –

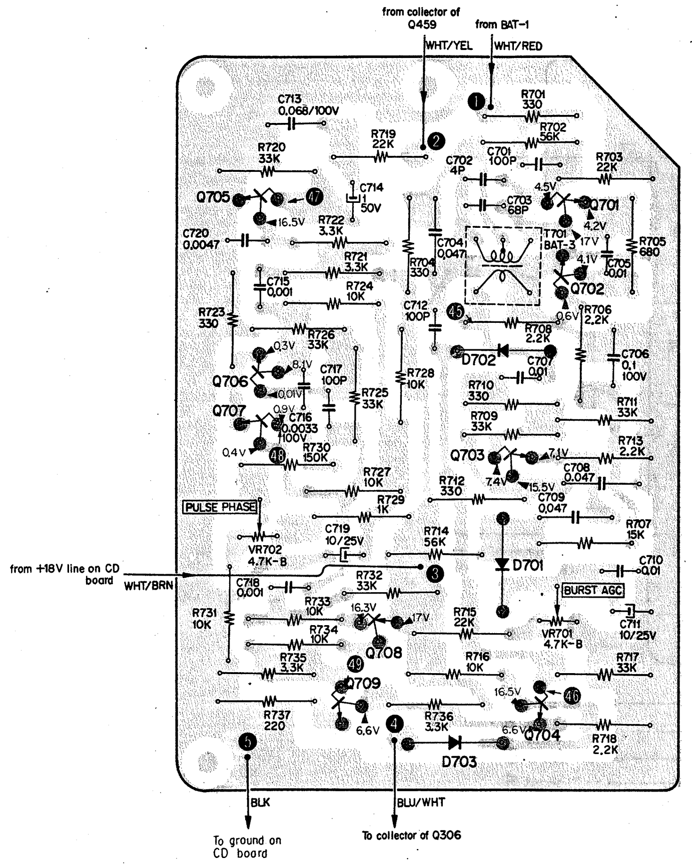




MOUNTING DIAGRAM

ID Circuit Board

– Conductor Side –

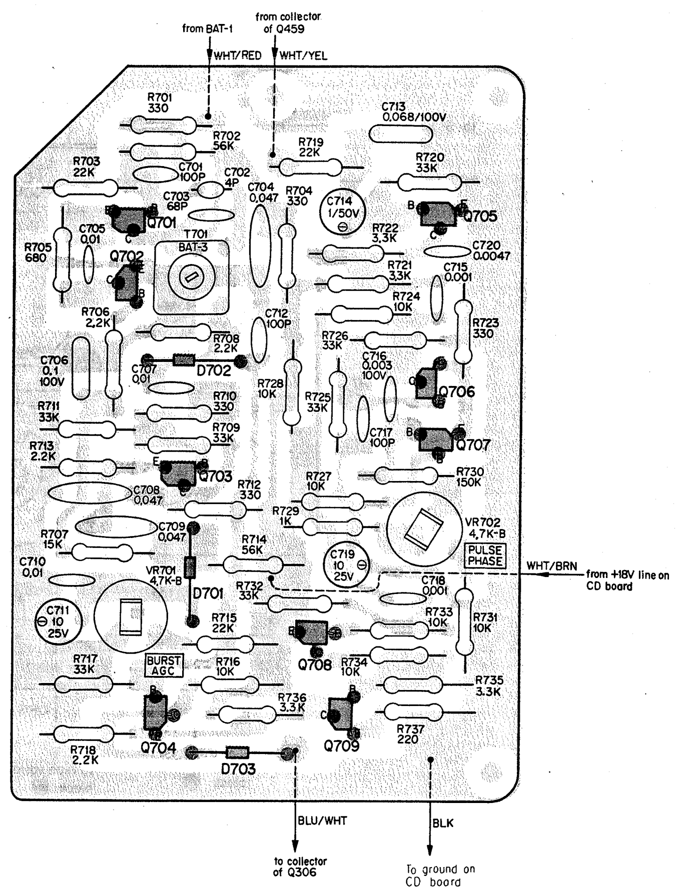


TRANSISTORS	
Q701	2SC403C
Q702	2SC633A
Q703	2SC633A
Q704	2SC633A
Q705	2SC633A
Q706	2SC633A
Q707	2SC633A
Q708	2SA677
Q709	2SC633A

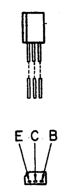
DIODES	
D701	1T40
D702	1T40
D703	1T40

ID Circuit Board

– Component Side –



ALL TRANSISTORS

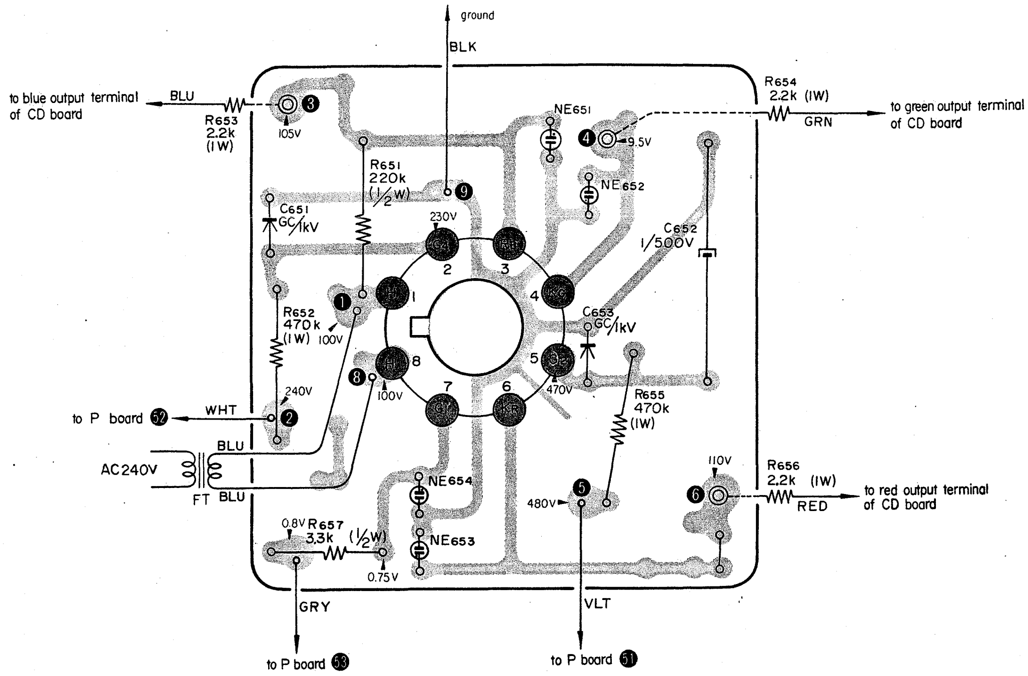


ALL DIODES

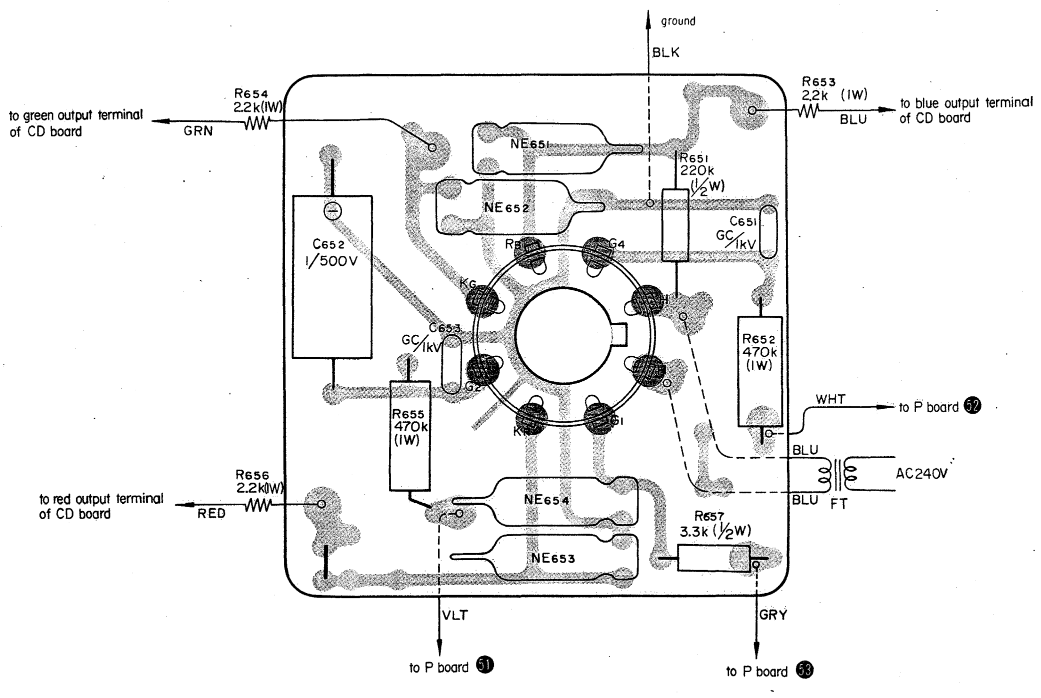
MOUNTING DIAGRAM

T Circuit Board

– Conductor Side –

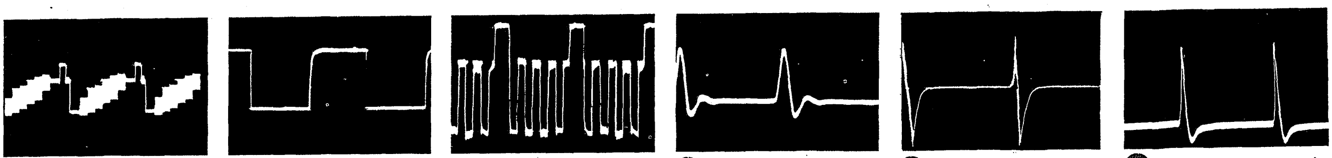


– Component Side –

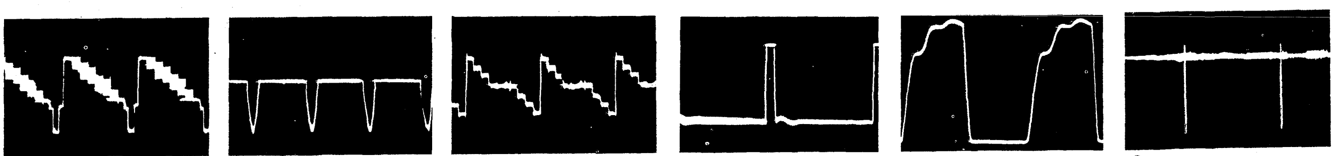


KV-1320UB

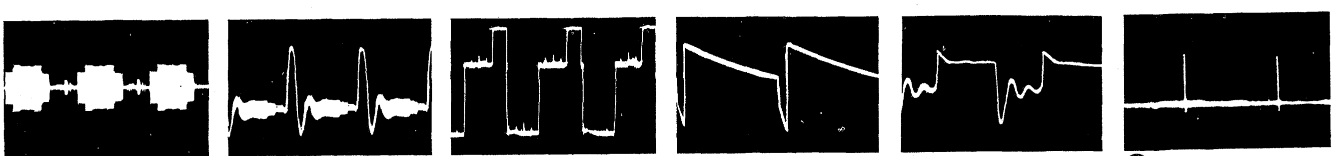
WAVEFORMS



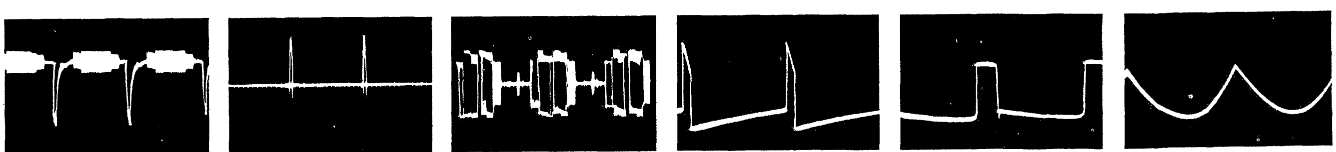
(1) 1.2 Vp-p (Horiz.) | (10) 13.0 Vp-p (Horiz.) | (18) 108 Vp-p (Horiz.) | (31) 6.0 Vp-p (Horiz.) | (39) 5.0 Vp-p (Vert.) | (47) 0.92 Vp-p (Vert.)



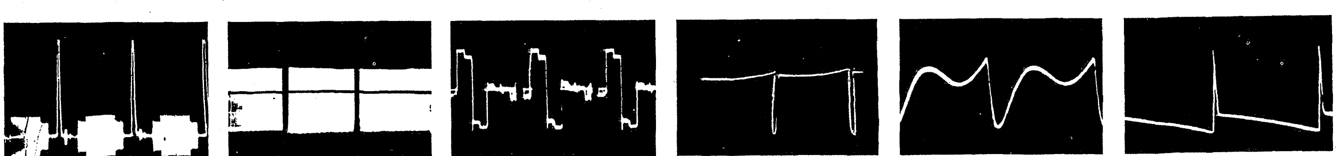
(2) 3.5 Vp-p (Horiz.) | (11) 115 Vp-p (Horiz.) | (24) 2.9 Vp-p (Horiz.) | (32) 11.0 Vp-p (Horiz.) | (40) 240 Vp-p (Horiz.) | (48) 8.0 Vp-p (Vert.)



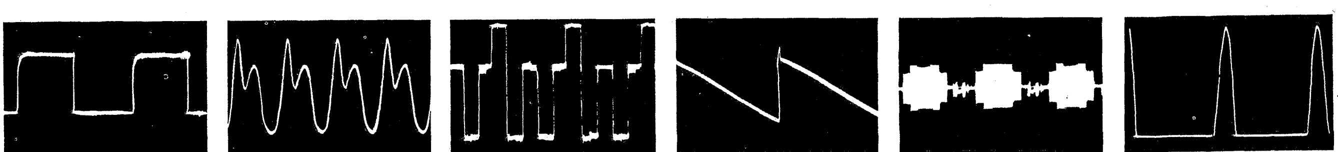
(3)(4) 1.1 Vp-p (Horiz.) | (12)(19) 4.1 Vp-p (Horiz.) | (25) 96 Vp-p (Horiz.) | (33) 7.8 Vp-p (Horiz.) | (41) 3.6 Vp-p (Horiz.) | (49) 5.6 Vp-p (Vert.)



(5) 3.3 Vp-p (Horiz.) | (13)(20) 9.0 Vp-p (Horiz.) | (26) 6.0 Vp-p (Horiz.) | (34) 8.4 Vp-p (Horiz.) | (42) 15.0 Vp-p (Horiz.) | (50) 0.35 Vp-p (Vert.)



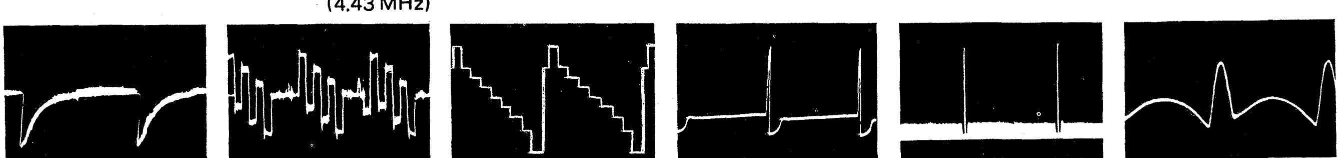
(6) 5.4 Vp-p (Horiz.) | (14)(21) 1.5 Vp-p (Horiz) | (27) 3.6 Vp-p (Horiz.) | (35) 8.0 Vp-p (Vert.) | (43) 1.8 Vp-p (Horiz.) | (51) 500 Vp-p (Vert.)



(7) 12.5 Vp-p (Horiz.) | (15)(22) 8.8 Vp-p (4.43 MHz) | (28) 108 Vp-p (Horiz.) | (36) 1.0 Vp-p (Vert.) | (44) 4.0 Vp-p (Horiz.) | (52) 610 Vp-p (Horiz.)

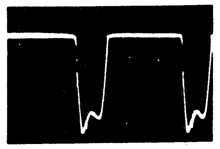


(8) 12.0 Vp-p (Horiz.) | (16)(23) 1.8 Vp-p (4.43 MHz) | (29) 6.8 Vp-p (Horiz.) | (37) 4.8 Vp-p (Vert.) | (45) 4.2 Vp-p (Horiz.) | (53) 610 Vp-p (Horiz.)

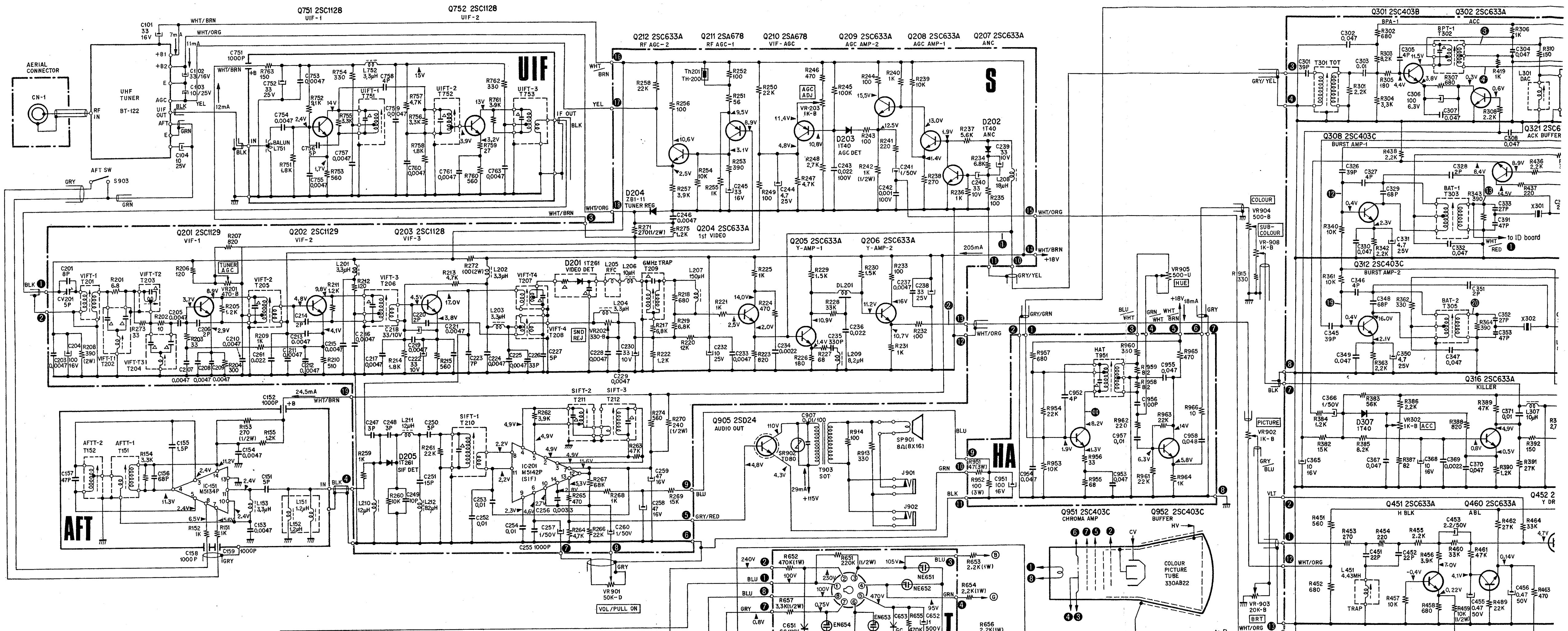


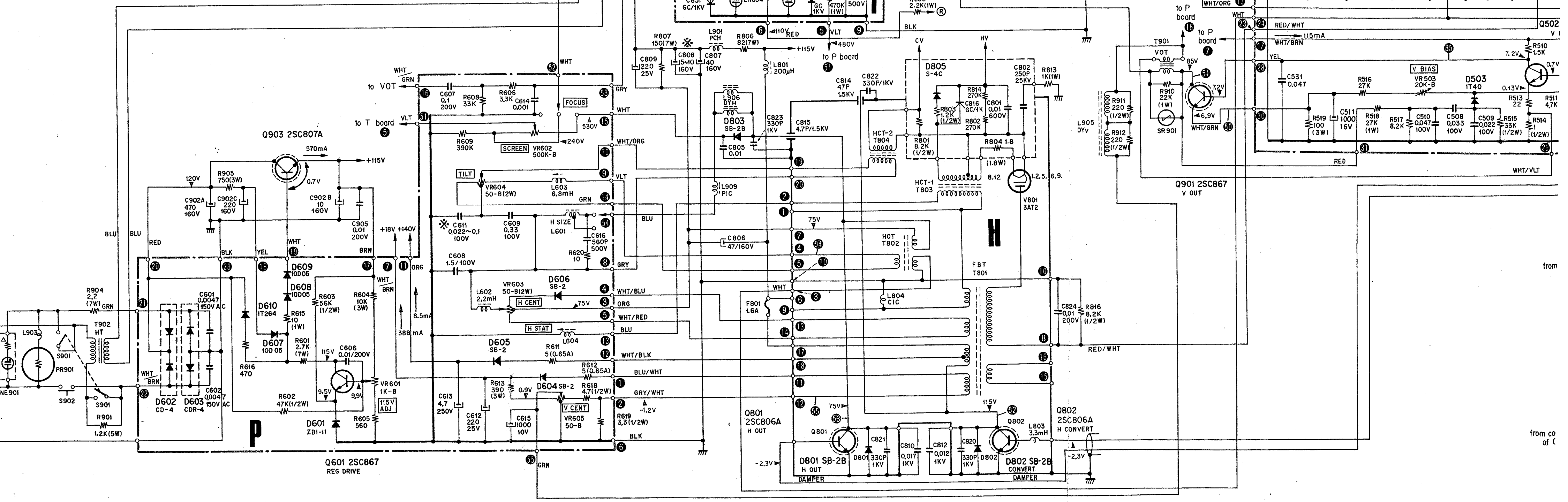
(9) 12.0 Vp-p (Horiz.) | (17) 4.0 Vp-p (Horiz.) | (30) 4.8 Vp-p (Horiz.) | (38) 4.6 Vp-p (Vert.) | (46) 4.0 Vp-p (Vert.) | (54) 200 Vp-p (Horiz.)

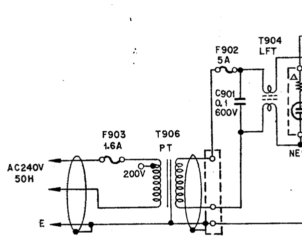
SCHEMATIC DIAGRAM



55 110 Vp-p (Horiz.)

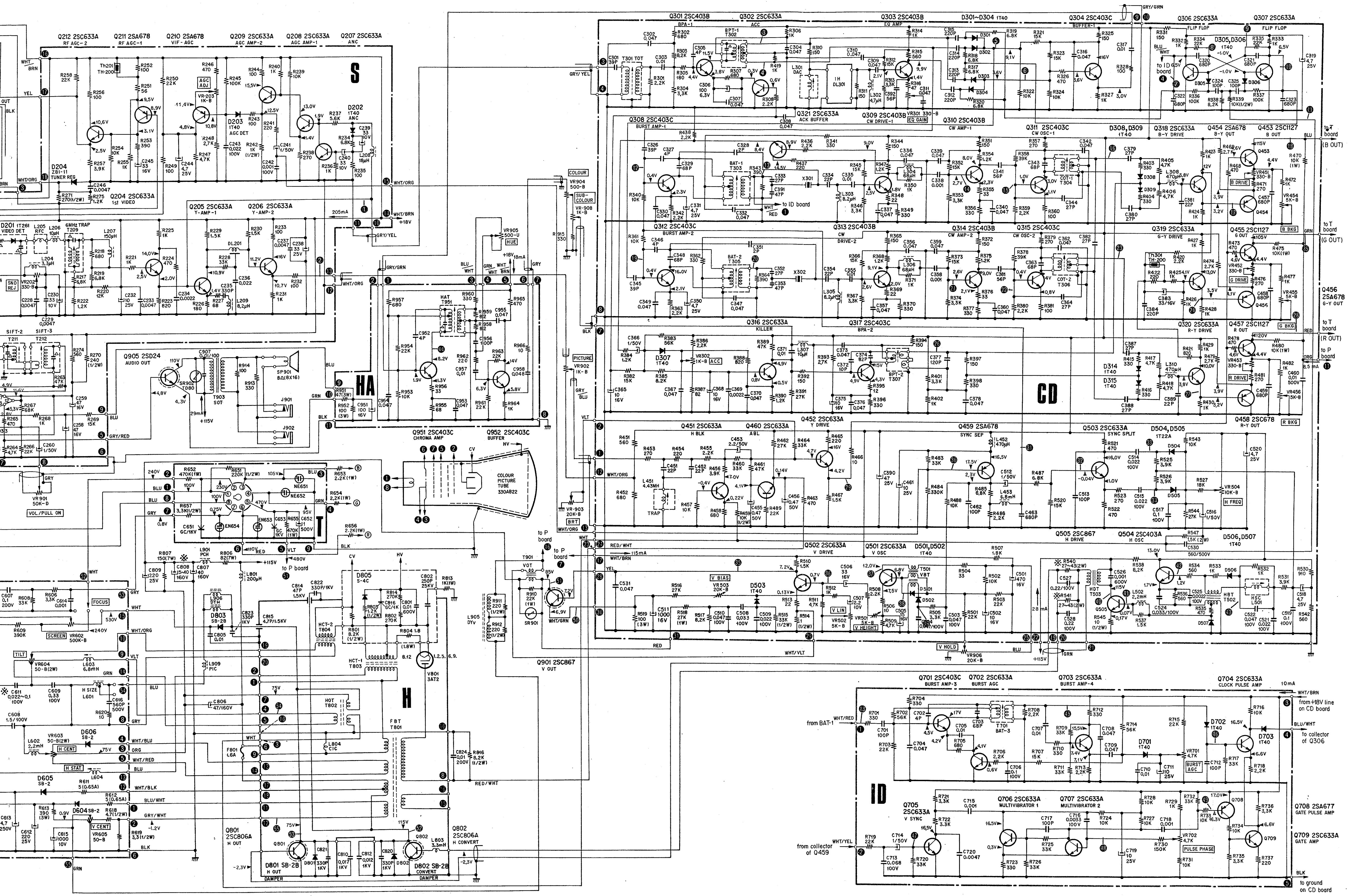




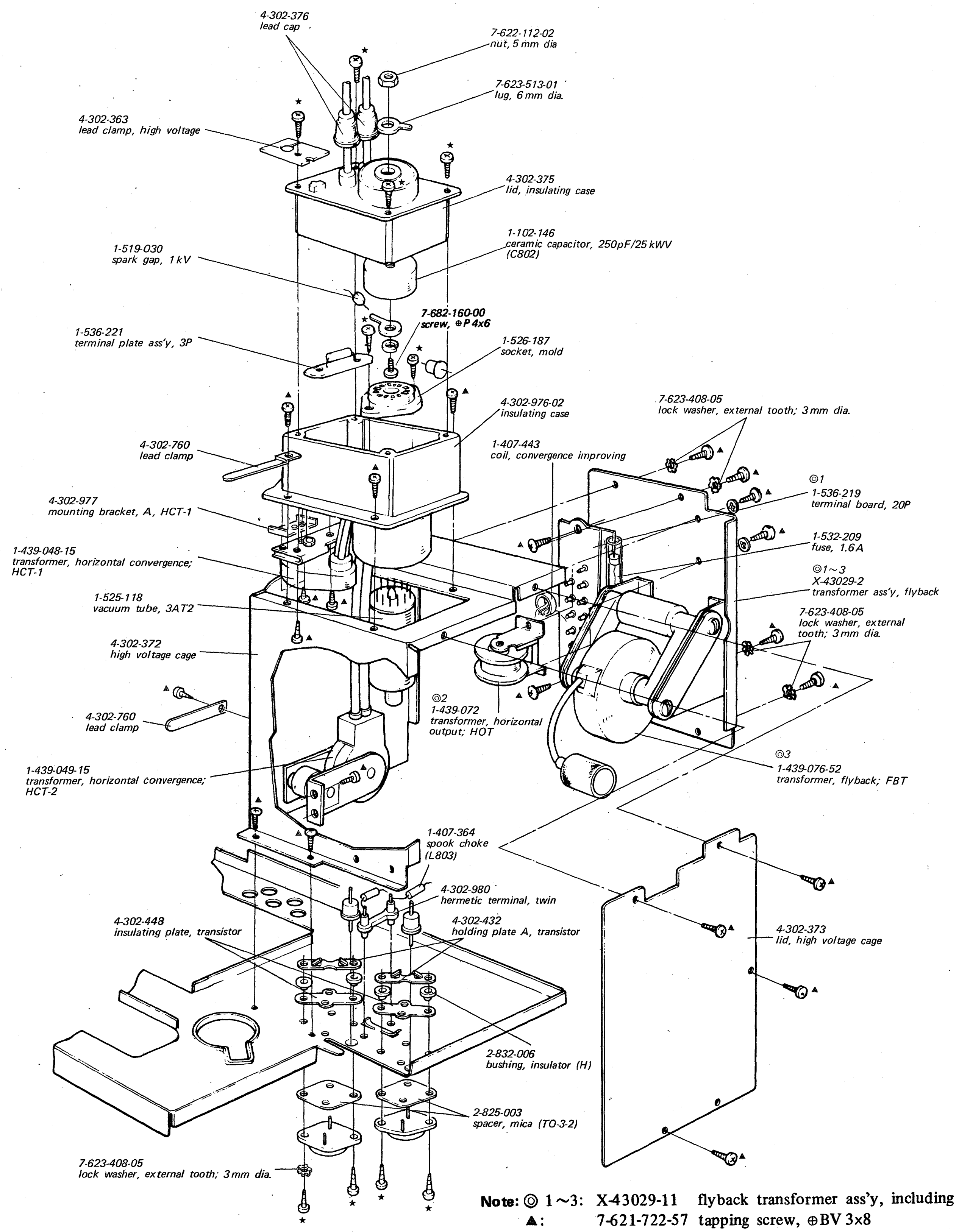


Note:

1. All capacitors are 50WV unless otherwise specified.
2. All resistors are ¼W unless otherwise specified.
3. All resistance values are in ohms. k = 1000
4. All capacitance values are in μF except as indicated with p, which means μμF.
5. Voltages measured from chassis to point indicated with a VOM (DC 20k ohms/V) with colour signal input.
6. Resistance values marked ※ are to be selected to yield specified operating conditions.
7. △ marks show the internal components of transformers.

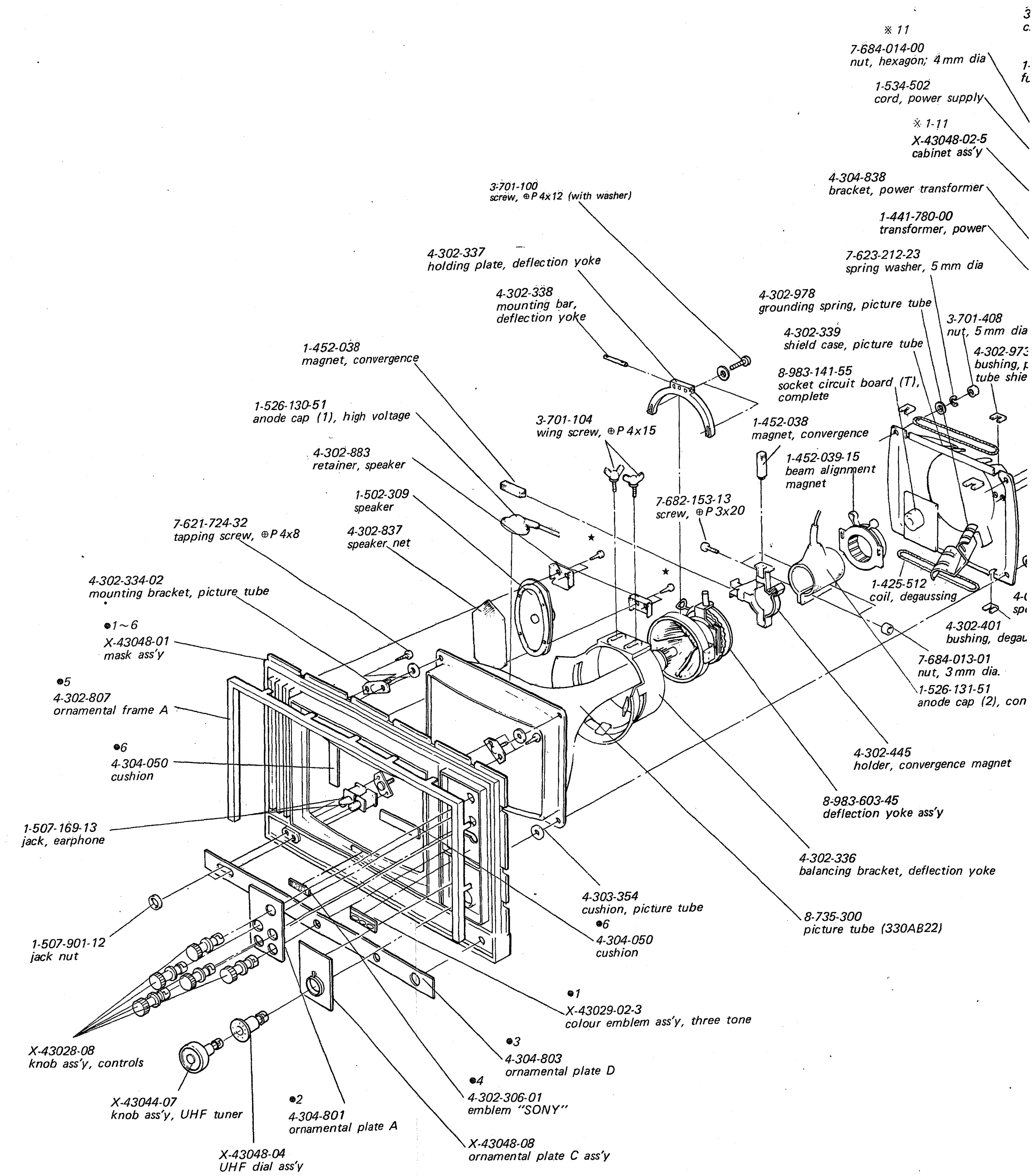

S
HA
T
H
CD
ID
Q212 2SC633A RF AGC-2
Q211 2SA678 RF AGC-1
Q210 2SA678 VIF-AGC
Q209 2SC633A AGC AMP-2
Q208 2SC633A AGC AMP-1
Q207 2SC633A ANC
Q204 2SC633A 1st VIDEO
Q205 2SC633A Y-AMP-1
Q206 2SC633A Y-AMP-2
Q905 2SD24 AUDIO OUT
Q951 2SC403C CHROMA AMP
Q952 2SC403C BUFFER
COLOUR PICTURE TUBE 330AB22
Q801 2SC806A H OUT
Q802 2SC806A H CONVERT
Q901 2SC867 V OUT
Q301 2SC403B BPA-1
Q302 2SC633A ACC
Q303 2SC403B EQ AMP
Q304 2SC403C BUFFER-1
Q306 2SC633A FLIP FLOP
Q307 2SC633A FLIP FLOP
Q308 2SC403C BURST AMP-1
Q309 2SC403B CW DRIVE-1
Q310 2SC403B CW AMP-1
Q311 2SC403C CW OSC-1
Q312 2SC403C BURST AMP-2
Q313 2SC403B CW DRIVE-2
Q314 2SC403B CW AMP-2
Q315 2SC403C CW OSC-2
Q316 2SC633A KILLER
Q317 2SC403C BPA-2
Q318 2SC633A B-Y DRIVE
Q319 2SC633A G-Y DRIVE
Q320 2SC633A R-Y DRIVE
Q321 2SC633A ACK BUFFER
Q451 2SC633A H BLK
Q452 2SC633A Y DRIVE
Q453 2SC1127 B OUT
Q454 2SA678 B-Y OUT
Q455 2SC1127 G OUT
Q456 2SA678 G-Y OUT
Q457 2SC1127 R OUT
Q458 2SC678 R-Y OUT
Q459 2SA678 SYNC SEP
Q460 2SC633A ABL
Q501 2SC633A V OSC
Q502 2SC633A V DRIVE
Q503 2SC633A SYNC SPLIT
Q504 2SC403A H OSC
Q505 2SC867 H DRIVE
Q701 2SC403C BURST AMP-3
Q702 2SC633A BURST AGC
Q703 2SC633A BURST AMP-4
Q704 2SC633A CLOCK PULSE AMP
Q705 2SC633A V SYNC
Q706 2SC633A MULTIVIBRATOR 1
Q707 2SC633A MULTIVIBRATOR 2
Q708 2SA677 GATE PULSE AMP
Q709 2SC633A GATE AMP
from BAT-1
from collector of Q459
from +18V line on CD board
to collector of Q306
to ground on CD board
to ID board
to P board

EXPLODED VIEW

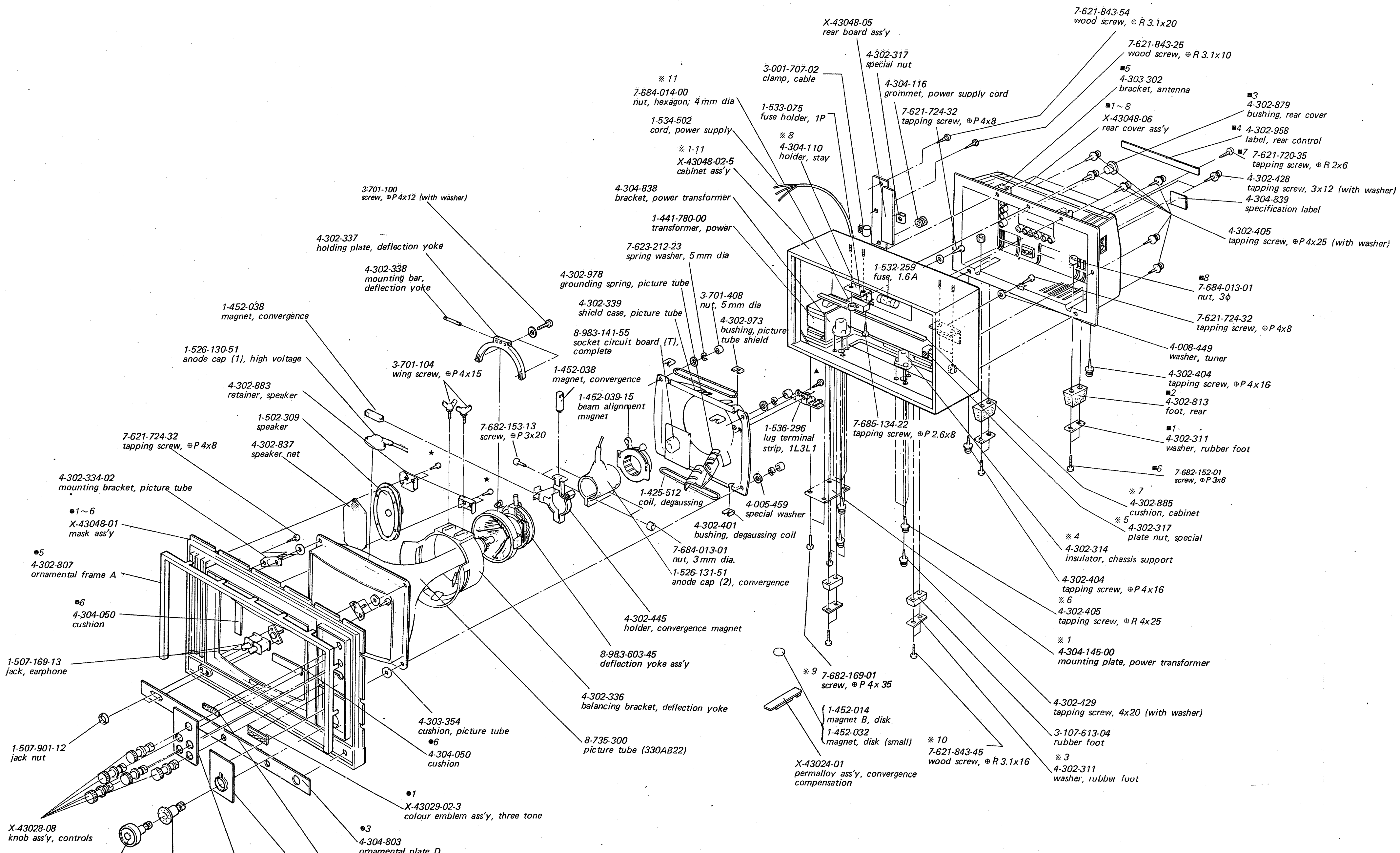


Note: ◎ 1~3: X-43029-11 flyback transformer ass'y, including
▲: 7-621-722-57 tapping screw, ⊕BV 3x8
★: 7-621-722-63 tapping screw, ⊕BV 3x10

EXPLODED VIEW



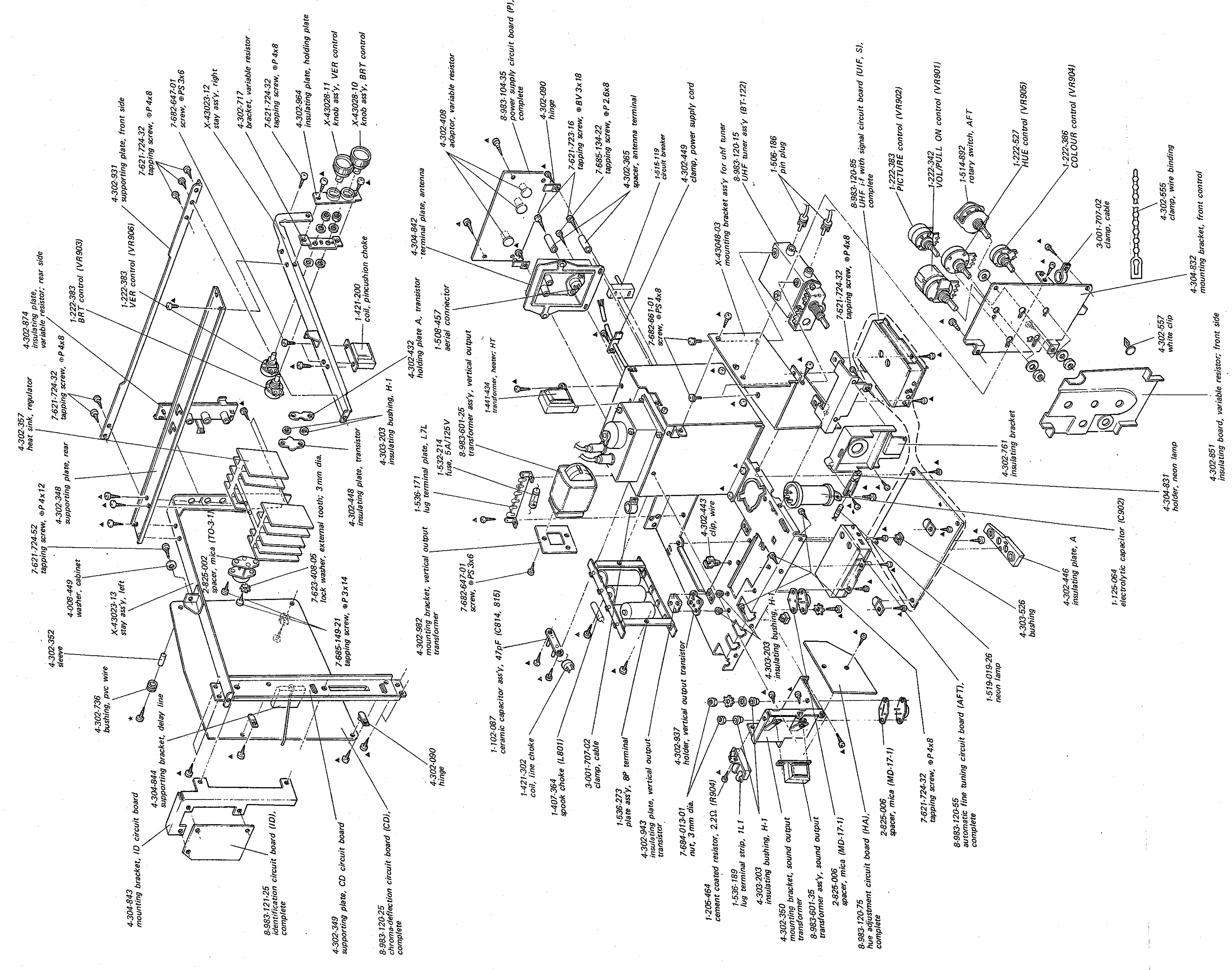
EXPLODED VIEW



Note:

●1～6:	X-43048-01	mask ass'y, including
※1～11:	X-43048-02	cabinet ass'y, including
■1～8:	X-43048-06	rear cover ass'y, including
▲:	7-621-722-57	tapping screw, ⊕BV 3x8
★:	7-621-722-63	tapping screw, ⊕BV 3x10

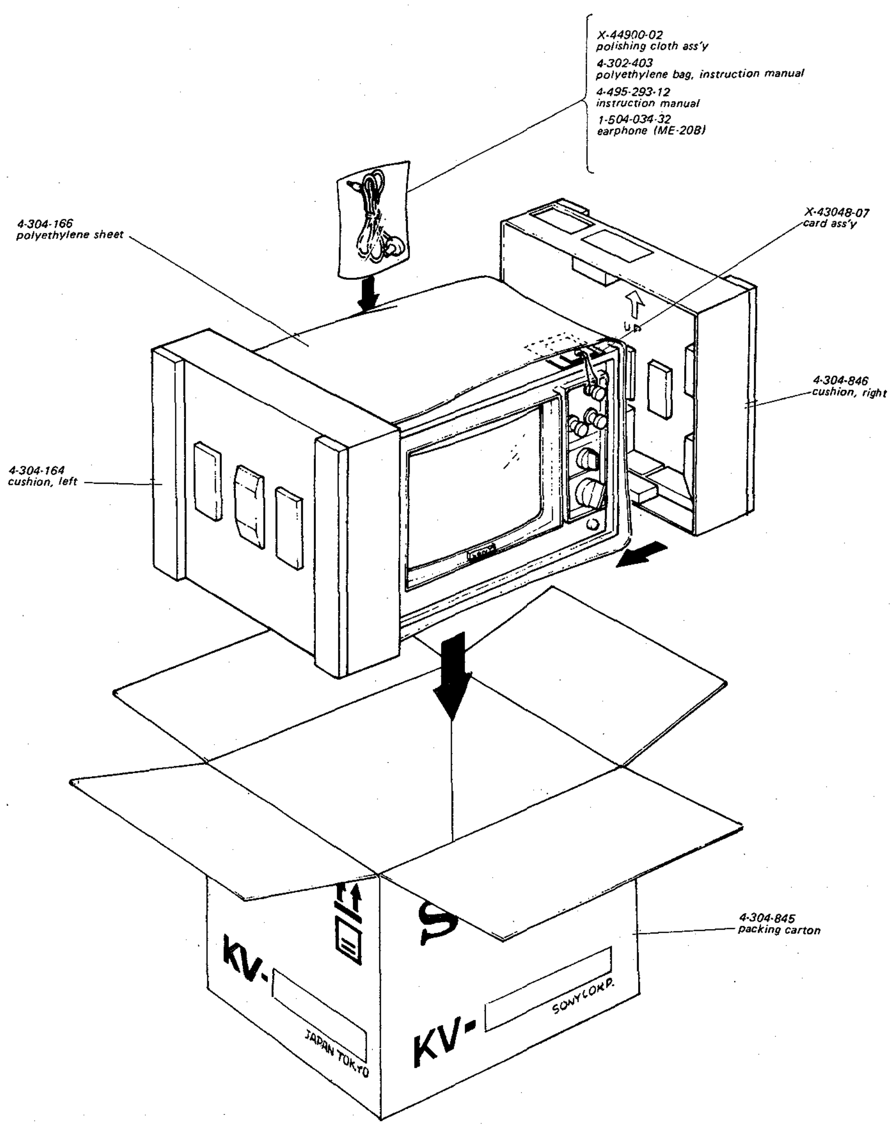
EXPLODED VIEW



Note: ▲: 7-621-722-57 tapping screw, ⊕BV3×8
★: 7-621-722-63 tapping screw, ⊕BV3×10

 KV-1320UB

PACKING



ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
		GENERAL
	8-983-120-15	UHF tuner ass'y (BT-122)
	8-983-104-35	power supply circuit board (P), complete
	8-983-120-25	chroma-deflection circuit board (CD), complete
	8-983-120-55	automatic fine tuning circuit board (AFT), complete
	8-983-120-75	hue adjustment circuit board (HA), complete
	8-983-120-85	UHF I-F w/ signal circuit board (UIF, S), complete
	8-983-121-25	identification circuit board (ID), complete
	8-983-141-55	socket circuit board (T), complete
	8-983-601-25	transformer ass'y, vertical output
	8-983-601-35	transformer ass'y, sound output
	8-983-603-45	deflection yoke ass'y
		SEMICONDUCTORS
Q201		transistor 2SC1129
Q202		transistor 2SC1129
Q203		transistor 2SC1128
Q204		transistor 2SC633A
Q205		transistor 2SC633A
Q206		transistor 2SC633A
Q207		transistor 2SC633A
Q208		transistor 2SC633A
Q209		transistor 2SC633A
Q210		transistor 2SA678
Q211		transistor 2SA678
Q212		transistor 2SC633A
Q301		transistor 2SC403B
Q302		transistor 2SC633A
Q303		transistor 2SC403B
Q304		transistor 2SC403C
Q305		– discarded –
Q306		transistor 2SC633A
Q307		transistor 2SC633A
Q308		transistor 2SC403C
Q309		transistor 2SC403B
Q310		transistor 2SC403B
Q311		transistor 2SC403C
Q312		transistor 2SC403C
Q313		transistor 2SC403B
Q314		transistor 2SC403B
Q315		transistor 2SC403C
Q316		transistor 2SC633A
Q317		transistor 2SC403C
Q318		transistor 2SC633A
Q319		transistor 2SC633A
Q320		transistor 2SC633A
Q321		transistor 2SC633A

Ref. No.	Part No.	Description
Q451		transistor 2SC633A
Q452		transistor 2SC633A
Q453		transistor 2SC1127
Q454		transistor 2SA678
Q455		transistor 2SC1127
Q456		transistor 2SA678
Q457		transistor 2SC1127
Q458		transistor 2SA678
Q459		transistor 2SA678
Q460		transistor 2SC633A
Q501		transistor 2SC633A
Q502		transistor 2SC633A
Q503		transistor 2SC633A
Q504		transistor 2SC403A
Q505		transistor 2SC867
Q601		transistor 2SC867
Q701		transistor 2SC403C
Q702		transistor 2SC633A
Q703		transistor 2SC633A
Q704		transistor 2SC633A
Q705		transistor 2SC633A
Q706		transistor 2SC633A
Q707		transistor 2SC633A
Q708		transistor 2SA677
Q709		transistor 2SC633A
Q751		transistor 2SC1128
Q752		transistor 2SC1128
Q801		transistor 2SC806A
Q802		transistor 2SC806A
Q901		transistor 2SC867
Q902		– discarded –
Q903		transistor 2SC807A
Q904		– discarded –
Q905		transistor 2SD24
Q951		transistor 2SC403C
Q952		transistor 2SC403C
D201		diode 1T261
D202		diode 1T40
D203		diode 1T40
D204		diode ZB1-11
D205		diode 1T261
D301		diode 1T40
D302		diode 1T40
D303		diode 1T40
D304		diode 1T40

Ref. No.	Part No.	Description	
D305		diode	1T40
D306		diode	1T40
D307		diode	1T40
D308		diode	1T40
D309		diode	1T40
D314		diode	1T40
D315		diode	1T40
D501		diode	1T40
D502		diode	1T40
D503		diode	1T40
D504		diode	1T22A
D505		diode	1T22A
D506		diode	1T40
D507		diode	1T40
D601		diode	ZB1-11
D602		diode	CD-4
D603		diode	CDR-4
D604		diode	SB-2
D605		diode	SB-2
D606		diode	SB-2
D607		diode	10D05
D608		diode	10D05
D609		diode	10D05
D610		diode	1T264
D701		diode	1T40
D702		diode	1T40
D703		diode	1T40
D801		diode	SB-2B
D802		diode	SB-2B
D803		diode	SB-2B
D804		– discarded –	
D805		diode	S-4C
IC151	1-805-105	IC	M-5134P
IC201	1-805-104	IC	M-5142P
Th201	1-800-059	thermistor	200Ω
Th301	1-800-059	thermistor	200Ω
PR901	1-800-065	thermistor (positive)	
SR901	1-800-031	varistor	
SR902	1-800-032	varistor	TD-80

COILS

Ref. No.	Part No.	Description	
L151	1-407-179	1.2μH	micro inductor
L152	1-407-179	1.2μH	micro inductor
L153	1-407-184	3.3μH	micro inductor
L201	1-407-184	3.3μH	micro inductor
L202	1-407-184	3.3μH	micro inductor
L203	1-407-184	3.3μH	micro inductor
L204	1-407-184	3.3μH	micro inductor
L205	1-425-504	coil, R.F.C.	
L206	1-407-157	10μH	micro inductor
L207	1-407-171	150μH	micro inductor
L208	1-407-160	18μH	micro inductor
L209	1-407-189	8.2μH	micro inductor
L210	1-407-158	12μH	micro inductor
L211	1-407-158	12μH	micro inductor
L212	1-407-168	82μH	micro inductor
L301	1-425-671	coil, DAC	
L302	1-407-186	4.7μH	micro inductor
L303	1-407-189	8.2μH	micro inductor
L304	1-407-167	68μH	micro inductor
L305	1-407-189	8.2μH	micro inductor
L306	1-407-167	68μH	micro inductor
L307	1-407-157	10μH	micro inductor
L308	1-407-177	470μH	micro inductor
L309		– discarded –	
L310	1-407-177	470μH	micro inductor
L451	1-409-207	4.43 MHz	wave trap coil
L452	1-407-177	470μH	micro inductor
L453	1-407-363	6.8 mH	micro inductor
L501	1-413-005	coil, horizontal stabilizing; HSC	
L502	1-407-198	2.2 mH	micro inductor
L601	1-459-050	coil, horizontal size	
L602	1-407-198	2.2 mH	micro inductor
L603	1-407-363	6.8 mH	micro inductor
L604	1-459-034	coil, horizontal stat	
L751	1-417-008	balun	
L752	1-407-184	3.3μH	micro inductor
L801	1-407-346	200μH	spook choke coil
L802		– discarded –	
L803	1-407-364	3.3μH	spook choke coil
L804	1-407-443	coil, convergence improving	
L901	1-421-200	coil, pincushion choke	
L902		– discarded –	
L903	1-425-512	coil, degaussing	
L904	1-425-512	coil, degaussing	
L905, L906	1-451-070	deflection yoke	
L909	1-452-039-15	beam alignment magnet	

TRANSFORMERS

Ref. No.	Part No.	Description
T151	1-403-810	AFT T-1

Ref. No.	*Part No.*	*Description*
T152	1-403-811	AFT T-2
T201	1-403-728	transformer, video i-f; VIFT-1
T202	1-409-214	coil, 41.5 MHz wave trap; VIFT-T1
T203	1-409-217	coil, 33.5 MHz wave trap; VIFT-T2
T204	1-409-215	coil, 31.5 MHz wave trap; VIFT-T3
T205	1-403-729	transformer, video i-f; VIFT-2
T206	1-403-729	transformer, video i-f; VIFT-3
T207	1-409-218	coil, wave trap; VIFT-T4
T208	1-403-730	transformer, video i-f; VIFT-4
T209	1-409-216	coil, 6 MHz wave trap
T210	1-403-384	transformer, sound i-f; SIFT-1
T211	1-403-385	transformer, sound i-f; SIFT-2
T212	1-403-386	transformer, sound i-f; SIFT-3
T301	1-425-678	transformer, take off; TOT
T302	1-425-677	transformer, 1st band pass; BPT-1
T303	1-405-372	transformer, burst amp; BAT-1
T304	1-425-618	transformer, cw oscillator; COT-1
T305	1-405-372	transformer, burst amp; BAT-2
T306	1-425-618	transformer, cw oscillator, COT-2
T307	1-425-506	transformer, 2nd band pass; BPT-2
T501	1-435-008	transformer, vertical oscillator; VBT
T502	1-435-034	transformer, horizontal oscillator; HBT
T503	1-437-025	transformer, horizontal drive; HDT
T701	1-405-372	transformer, burst amp; BAT-3
T751	1-403-807	UIFT-1
T752	1-403-808	UIFT-2
T753	1-403-809	UIFT-3
T801	X-43029-11	transformer ass'y, flyback
T802		– discarded –
T803	1-439-048	transformer, horizontal convergence; HCT-1
T804	1-439-049	transformer, horizontal convergence; HCT-2
T901	1-427-300	transformer, vertical output; VOT
T902	1-441-434	transformer, heater; HT
T903	1-427-307	transformer, sound output
T904	1-421-302	transformer, line filter
T906	1-441-780-00	transformer, power; PT
T951	1-425-677	transformer, hue adjustment; HAT

CAPACITORS

Ref. No.	*Part No.*	*Description*			
C101	1-121-403	33μF	$\pm^{100}_{10}$%	16WV	electrolytic
C102	1-121-403	33μF	$\pm^{100}_{10}$%	16WV	electrolytic
C103	1-121-398	10μF	$\pm^{100}_{10}$%	25WV	electrolytic
C104	1-121-398	10μF	$\pm^{100}_{10}$%	25WV	electrolytic
C151	1-102-942	5pF	±0.5pF	50WV	ceramic
C152	1-102-043	1,000pF	$\pm^{200}_{0}$%	500WV	feed through
C153	1-102-102	0.0047μF	±20%	50WV	ceramic
C154	1-102-102	0.0047μF	±20%	50WV	ceramic
C155	1-101-576	1.5 pF	±0.25pF	50WV	ceramic
C156	1-102-525	68pF	±5%	50WV	ceramic
C157	1-102-774	47pF	±0.5pF	50WV	ceramic
C158	1-102-043	1,000pF	$\pm^{200}_{0}$%	500WV	feed through
C159	1-102-043	1,000pF	$\pm^{200}_{0}$%	500WV	feed through
C201	1-102-663	8pF	±0.5pF	50WV	ceramic
C202		– discarded –			
C203	1-102-102	0.0047μF	±20%	50WV	ceramic
C204	1-121-415	100μF	$\pm^{100}_{10}$%	16WV	electrolytic
C205	1-102-102	0.0047μF	±20%	50WV	ceramic
C206	1-102-935	2pF	±0.25pF	50WV	ceramic
C207	1-102-102	0.0047μF	±20%	50WV	ceramic
C208	1-102-102	0.0047μF	±20%	50WV	ceramic
C209	1-102-102	0.0047μF	±20%	50WV	ceramic
C210	1-102-102	0.0047μF	±20%	50WV	ceramic
C211	1-102-102	0.0047μF	±20%	50WV	ceramic
C212	1-102-102	0.0047μF	±20%	50WV	ceramic
C213	1-102-102	0.0047μF	±20%	50WV	ceramic
C214	1-102-935	2pF	±0.25pF	50WV	ceramic
C215	1-102-102	0.0047μF	±20%	50WV	ceramic
C216	1-102-102	0.0047μF	±20%	50WV	ceramic
C217	1-102-102	0.0047μF	±20%	50WV	ceramic
C218	1-121-402	33μF	$\pm^{100}_{10}$%	10WV	electrolytic
C219	1-102-102	0.0047μF	±20%	50WV	ceramic
C220	1-102-935	2pF	±0.25pF	50WV	ceramic
C221	1-102-102	0.0047μF	±20%	50WV	ceramic
C222	1-121-402	33μF	$\pm^{100}_{10}$%	10WV	electrolytic
C223	1-102-662	7pF	±0.5pF	50WV	ceramic
C224	1-102-102	0.0047μF	±20%	50WV	ceramic
C225	1-102-102	0.0047μF	±20%	50WV	ceramic
C226	1-102-963	33pF	±5%	50WV	ceramic
C227	1-102-856	5pF	±5%	50WV	ceramic
C228	1-102-102	0.0047μF	±20%	50WV	ceramic
C229	1-102-102	0.0047μF	±20%	50WV	ceramic
C230	1-121-402	33μF	$\pm^{100}_{10}$%	10WV	electrolytic
C231		– built in VIDEO DET –			
C232	1-121-398	10μF	$\pm^{100}_{10}$%	25WV	electrolytic
C233	1-102-102	0.0047μF	±20%	50WV	ceramic
C234	1-101-002	0.0022μF	$\pm^{100}_{0}$%	50WV	ceramic
C235	1-102-832	330pF	±10%	50WV	ceramic
C236	1-101-005	0.022μF	$\pm^{100}_{0}$%	50WV	ceramic
C237	1-102-102	0.0047μF	±20%	50WV	ceramic
C238	1-121-404	33μF	$\pm^{100}_{10}$%	25WV	electrolytic
C239	1-121-402	33μF	$\pm^{100}_{10}$%	10WV	electrolytic
C240	1-121-402	33μF	$\pm^{100}_{10}$%	10WV	electrolytic
C241	1-121-442	1μF	$\pm^{150}_{10}$%	50WV	electrolytic
C242	1-105-701-12	0.001μF	±10%	100WV	mylar
C243	1-105-717-12	0.022μF	±10%	100WV	mylar
C244	1-121-395	4.7μF	$\pm^{150}_{10}$%	25WV	electrolytic
C245	1-121-403	33μF	$\pm^{100}_{10}$%	16WV	electrolytic

Ref. No.	Part No.	Description			
C246	1-102-102	0.0047µF	±20%	50WV	ceramic
C247	1-102-940	3pF	±0.5pF	50WV	ceramic
C248	1-102-940	3pF	±0.5pF	50WV	ceramic
C249	1-102-947	10pF	±5%	50WV	ceramic
C250	1-102-942	5pF	±0.5pF	50WV	ceramic
C251	1-102-951	15pF	±5%	50WV	ceramic
C252	1-101-004	0.01µF	$\pm^{100}_{0}$%	50WV	ceramic
C253	1-101-004	0.01µF	$\pm^{100}_{0}$%	50WV	ceramic
C254	1-101-004	0.01µF	$\pm^{100}_{0}$%	50WV	ceramic
C255	1-101-455	1,000pF	±20%	50WV	ceramic
C256	1-105-707-12	0.0033µF	±10%	100WV	mylar
C257	1-121-442	1µF	$\pm^{150}_{10}$%	50WV	electrolytic
C258	1-121-409	47µF	$\pm^{100}_{10}$%	16WV	electrolytic
C259	1-121-409	47µF	$\pm^{100}_{10}$%	16WV	electrolytic
C260	1-121-442	1µF	$\pm^{150}_{10}$%	50WV	electrolytic
C301	1-102-889	39pF	±5%	50WV	ceramic
C302	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C303	1-101-118	0.01µF	±20%	50WV	ceramic
C304	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C305	1-102-937	4pF	±0.25pF	50WV	ceramic
C306	1-121-413	100µF	$\pm^{100}_{10}$%	6.3WV	electrolytic
C307	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C308	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C309	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C310	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C311	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C312	1-102-978	220pF	±5%	50WV	ceramic
C313	1-102-978	220pF	±5%	50WV	ceramic
C314	1-102-978	220pF	±5%	50WV	ceramic
C315	1-102-978	220pF	±5%	50WV	ceramic
C316	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C317	1-101-118	0.01µF	±20%	50WV	ceramic
C318		– discarded –			
C319	1-121-395	4.7µF	$\pm^{150}_{10}$%	25WV	electrolytic
C320	1-101-439	680pF	±20%	50WV	ceramic
C321	1-101-439	680pF	±20%	50WV	ceramic
C322	1-101-439	680pF	±20%	50WV	ceramic
C323	1-101-439	680pF	±20%	50WV	ceramic
C324	1-102-973	100pF	±5%	50WV	ceramic
C325	1-102-973	100pF	±5%	50WV	ceramic
C326	1-101-877	39pF	±10%	50WV	ceramic
C327	1-102-937	4pF	±0.25pF	50WV	ceramic
C328	1-102-935	2pF	±0.25pF	50WV	ceramic
C329	1-102-676	68pF	±5%	50WV	ceramic
C330	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C331	1-121-395	4.7µF	$\pm^{150}_{10}$%	25WV	electrolytic
C332	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C333	1-102-961	27pF	±5%	50WV	ceramic
C334	1-102-959	22pF	±5%	50WV	ceramic
C335	1-101-118	0.01µF	±20%	50WV	ceramic
C336	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C337	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C338	1-102-074	1,000pF	±10%	50WV	ceramic
C339	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C340	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C341	1-101-884	56pF	±5%	50WV	ceramic
C342	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C343	1-102-676	68pF	±5%	50WV	ceramic
C344	1-102-961	27pF	±5%	50WV	ceramic
C345	1-101-877	39pF	±10%	50WV	ceramic
C346	1-102-937	4pF	±0.25pF	50WV	ceramic
C347	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C348	1-102-676	68pF	±5%	50WV	ceramic
C349	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C350	1-121-395	4.7µF	$\pm^{150}_{10}$%	25WV	electrolytic
C351	1-102-935	2pF	±0.25pF	50WV	ceramic
C352	1-102-961	27pF	±5%	50WV	ceramic
C353	1-101-880	47pF	±5%	50WV	ceramic
C354	1-102-959	22pF	±5%	50WV	ceramic
C355	1-101-118	0.01µF	±20%	50WV	ceramic
C356	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C357	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C358	1-102-074	1,000pF	±10%	50WV	ceramic
C359	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C360	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C361	1-101-884	56pF	±5%	50WV	ceramic
C362	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C363	1-102-676	68pF	±5%	50WV	ceramic
C364	1-102-961	27pF	±5%	50WV	ceramic
C365	1-121-469	10µF	$\pm^{100}_{10}$%	16WV	electrolytic
C366	1-121-391	1µF	$\pm^{150}_{10}$%	50WV	electrolytic
C367	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C368	1-121-469	10µF	$\pm^{100}_{10}$%	16WV	electrolytic
C369	1-101-002	0.0022µF	$\pm^{100}_{10}$%	50WV	ceramic
C370	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C371	1-101-118	0.01µF	±20%	50WV	ceramic
C372	1-102-947	10pF	±5%	50WV	ceramic
C373	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C374	1-102-863	82pF	±5%	50WV	ceramic
C375	1-121-469	10µF	$\pm^{100}_{10}$%	16WV	electrolytic
C376	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C377	1-102-679	120pF	±5%	50WV	ceramic
C378	1-101-006	0.047µF	$\pm^{100}_{0}$%	50WV	ceramic
C379	1-102-961	27pF	±5%	50WV	ceramic
C380	1-102-961	27pF	±5%	50WV	ceramic
C381	1-102-959	22pF	±5%	50WV	ceramic
C382	1-102-961	27pF	±5%	50WV	ceramic
C383	1-121-403	33µF	$\pm^{100}_{0}$%	16WV	electrolytic
C384	1-102-978	220pF	±5%	50WV	ceramic
C385		– discarded –			
C386		– discarded –			
C387	1-102-961	27pF	±5%	50WV	ceramic
C388	1-102-961	27pF	±5%	50WV	ceramic
C389	1-102-959	22pF	±5%	50WV	ceramic
C390	1-121-410	47µF	$\pm^{100}_{10}$%	25WV	electrolytic

Ref. No.	Part No.	Description			
C391	1-101-880	47pF	±5%	50WV	ceramic
C392	1-102-850	56pF	±5%	50WV	ceramic
C451	1-102-892	22pF	±10%	50WV	ceramic
C452	1-102-892	22pF	±10%	50WV	ceramic
C453	1-121-450	2.2μF	$\pm^{150}_{10}$%	50WV	electrolytic
C454		– discarded –			
C455	1-121-726	0.47μF	$\pm^{150}_{10}$%	50WV	electrolytic
C456	1-121-726	0.47μF	$\pm^{150}_{10}$%	50WV	electrolytic
C457	1-101-439	680pF	±20%	50WV	ceramic
C458	1-101-439	680pF	±20%	50WV	ceramic
C459	1-101-439	680pF	±20%	50WV	ceramic
C460	1-101-823	0.01μF	$\pm^{100}_{10}$%	500WV	ceramic
C461	1-121-398	10μF	$\pm^{100}_{10}$%	25WV	electrolytic
C462	1-102-973	100pF	±5%	50WV	ceramic
C463	1-101-439	680pF	±20%	50WV	ceramic
C501	1-121-426	470μF	$\pm^{100}_{10}$%	16WV	electrolytic
C502	1-121-398	10μF	$\pm^{100}_{10}$%	25WV	electrolytic
C503	1-106-269-12	0.047μF	±10%	100WV	mylar
C504	1-106-269-12	0.047μF	±10%	100WV	mylar
C505	1-131-155	15μF	±20%	16WV	tantalum
C506	1-121-403	33μF	$\pm^{100}_{10}$%	16WV	electrolytic
C507	1-127-024	2.2μF	±20%	10WV	electrolytic (alox)
C508	1-105-719-12	0.033μF	±10%	100WV	mylar
C509	1-105-717-12	0.022μF	±10%	100WV	mylar
C510	1-105-721-12	0.047μF	±10%	100WV	mylar
C511	1-121-245	1,000μF	$\pm^{100}_{10}$%	16WV	electrolytic
C512	1-121-391	1μF	$\pm^{150}_{10}$%	50WV	electrolytic
C513	1-102-973	100pF	±5%	50WV	ceramic
C514	1-105-717-12	0.022μF	±10%	100WV	mylar
C515	1-105-717-12	0.022μF	±10%	100WV	mylar
C516	1-121-391	1μF	$\pm^{150}_{10}$%	50WV	electrolytic
C517	1-105-725-12	0.1μF	±10%	100WV	mylar
C518	1-121-395	4.7μF	$\pm^{150}_{10}$%	25WV	electrolytic
C519	1-105-725-12	0.1μF	±10%	100WV	mylar
C520	1-121-395	4.7μF	$\pm^{150}_{10}$%	25WV	electrolytic
C521	1-105-717-12	0.022μF	±10%	100WV	mylar
C522	1-105-721-12	0.047μF	±10%	100WV	mylar
C523		– discarded –			
C524	1-105-719-12	0.033μF	±10%	100WV	mylar
C525	1-105-705-12	0.0022μF	±10%	100WV	mylar
C526	1-105-461-16	0.001μF	±10%	600WV	mylar
C527	1-105-729-13	0.22μF	±10%	100WV	mylar
C528	1-105-729-13	0.22μF	±10%	100WV	mylar
C529		– discarded –			
C530	1-102-157	560μF	±10%	500WV	ceramic
C531	1-101-006	0.047μF	$\pm^{100}_{0}$%	50WV	ceramic
C601	1-102-189	0.0047μF	$\pm^{80}_{20}$%	150WV	ceramic
C602	1-102-189	0.0047μF	$\pm^{80}_{20}$%	150WV	ceramic
C603		– discarded –			
C604		– discarded –			

Ref. No.	Part No.	Description			
C605		– discarded –			
C606	1-105-753-12	0.01μF	±10%	200WV	mylar
C607	1-105-765-12	0.1μF	±10%	200WV	mylar
C608	1-108-321-11	1.5μF	±10%	100WV	mylar
C609	1-105-731-13	0.33μF	±10%	100WV	mylar
C610		– discarded –			
*C611	1-105-717-12	0.022μF	±10%	100WV	mylar
	1-105-719-12	0.033μF	±10%	100WV	mylar
	1-105-721-12	0.047μF	±10%	100WV	mylar
	1-105-723-12	0.068μF	±10%	100WV	mylar
	1-105-725-12	0.1μF	±10%	100WV	mylar
C612	1-121-422	220μF	$\pm^{100}_{0}$%	25WV	electrolytic
C613	1-121-747	4.7μF	$\pm^{150}_{0}$%	250WV	electrolytic
C614	1-105-481-16	0.001μF	±20%	600WV	mylar
C615	1-121-736	1,000μF	$\pm^{100}_{0}$%	10WV	electrolytic
C616	1-102-157	560pF	±10%	500WV	ceramic
C651	1-519-030	1kV, spark gap			
C652	1-119-242	1μF	$\pm^{150}_{10}$%	500WV	electrolytic
C653	1-519-030	1kV, spark gap			
C701	1-102-973	100pF	±5%	50WV	ceramic
C702	1-102-937	4pF	±0.25pF	50WV	ceramic
C703	1-102-676	68pF	±5%	50WV	ceramic
C704	1-101-006	0.047μF	$\pm^{100}_{0}$%	50WV	ceramic
C705	1-101-004	0.01μF	$\pm^{100}_{0}$%	50WV	ceramic
C706	1-105-725-12	0.1μF	±10%	100WV	mylar
C707	1-101-004	0.01μF	$\pm^{100}_{0}$%	50WV	ceramic
C708	1-101-006	0.047μF	$\pm^{100}_{0}$%	50WV	ceramic
C709	1-101-006	0.047μF	$\pm^{100}_{0}$%	50WV	ceramic
C710	1-101-004	0.01μF	$\pm^{100}_{0}$%	50WV	ceramic
C711	1-121-398	10μF	$\pm^{100}_{10}$%	25WV	electrolytic
C712	1-102-973	100pF	±5%	50WV	ceramic
C713	1-105-723-12	0.068μF	±10%	100WV	mylar
C714	1-121-391	1μF	$\pm^{150}_{10}$%	50WV	electrolytic
C715	1-101-001	0.001μF	$\pm^{100}_{0}$%	50WV	ceramic
C716	1-106-184-11	0.0033μF	±5%	100WV	mylar
C717	1-102-973	100pF	±5%	50WV	ceramic
C718	1-101-001	0.001μF	$\pm^{100}_{0}$%	50WV	ceramic
C719	1-121-398	10μF	$\pm^{100}_{10}$%	25WV	electrolytic
C720	1-101-003	0.0047μF	$\pm^{100}_{0}$%	50WV	ceramic
C751	1-102-043	1,000pF	$\pm^{200}_{0}$%	500WV	feed through
C752	1-121-404	33μF	$\pm^{100}_{10}$%	25WV	electrolytic
C753	1-102-102	0.0047μF	±20%	50WV	ceramic
C754	1-102-102	0.0047μF	±20%	50WV	ceramic
C755	1-102-102	0.0047μF	±20%	50WV	ceramic
C756	1-102-942	5pF	±0.5pF	50WV	ceramic
C757	1-102-102	0.0047μF	±20%	50WV	ceramic
C758	1-102-937	4pF	±0.25pF	50WV	ceramic
C759	1-102-102	0.0047μF	±20%	50WV	ceramic
C760	1-102-102	0.0047μF	±20%	50WV	ceramic
C761	1-102-102	0.0047μF	±20%	50WV	ceramic
C762		– discarded –			
C763	1-102-102	0.0047μF	±20%	50WV	ceramic

* Mark to be selected.

Ref. No.	Part No.	Description
C801	1-105-467-13	0.01μF ±10% 600WV mylar
C802	1-102-146	250pF ±20% 25kWV ceramic
C803		– discarded –
C804		– discarded –
C805	1-108-335-11	0.01μF ±20% 1kWV mylar
C806	1-119-244	47μF $\pm^{100}_{10}\%$ 160WV electrolytic
C807	1-119-310	40μF ±20% 160WV electrolytic
C808	1-119-246	5μF ±20% 160WV electrolytic
C809	1-119-273	220μF $\pm^{150}_{10}\%$ 25WV electrolytic
C810	1-129-778	0.017μF ±5% 1kWV polypropylene
C811		– discarded –
C812	1-129-777	0.012μF ±5% 1kWV polypropylene
C813		– discarded –
C814	1-102-087	47pF ±10% 1.5kWV ceramic
C815	1-102-087	47pF ±10% 1.5kWV ceramic
C816	1-519-030	1kV, spark gap
C817		– discarded –
C818		– discarded –
C819		– discarded –
C820	1-102-095	330pF ±20% 1kWV ceramic
C821	1-102-095	330pF ±20% 1kWV ceramic
C822	1-102-095	330pF ±20% 1kWV ceramic
C823	1-102-095	330pF ±20% 1kWV ceramic
C824	1-105-753-12	0.01μF ±10% 200WV mylar
C901	1-129-739	0.1μF ±20% 600WV film
C902	1-125-064	470μF + 10μF + 220μF $\pm^{100}_{10}\%$ 160WV electrolytic (block type)
C905	1-105-913-12	0.01μF ±20% 200WV mylar
C951	1-121-415	100μF $\pm^{100}_{10}\%$ 16WV electrolytic
C952	1-102-937	4pF ±0.25pF 50WV ceramic
C953	1-102-196	0.047μF ±20% 50WV ceramic
C954	1-102-196	0.047μF ±20% 50WV ceramic
C955	1-102-196	0.047μF ±20% 50WV ceramic
C956	1-102-973	100pF ±5% 50WV ceramic
C957	1-101-118	0.01μF ±20% 50WV ceramic
C958	1-102-196	0.047μF ±20% 50WV ceramic
CV201	1-141-136	5pF ceramic, cylinder trimmer

RESISTORS

(All resistors are ±5% ERD14T carbon, unless otherwise specified)

Ref. No.	Part No.	Description
R151	1-246-673	1kΩ
R152	1-246-673	1kΩ
R153	1-250-859	270Ω RD12T
R154	1-246-685	3.3kΩ
R155	1-246-675	1.2kΩ
R201	1-246-621	6.8Ω
R202	1-246-625	10Ω
R203	1-246-637	33Ω
R204	1-246-660	300Ω
R205	1-246-675	1.2kΩ
R206	1-246-651	120Ω
R207	1-246-671	820Ω
R208	1-206-126	390Ω 2W metal oxide
R209	1-246-673	1kΩ
R210	1-246-666	510Ω
R211	1-246-675	1.2kΩ
R212	1-246-651	120Ω
R213	1-246-689	4.7kΩ
R214	1-246-679	1.8kΩ
R215	1-246-667	560Ω
R216		built in VIDEO DET
R217	1-246-693	6.8kΩ
R218	1-246-669	680Ω
R219	1-246-693	6.8kΩ
R220	1-246-699	12kΩ
R221	1-246-673	1kΩ
R222	1-246-675	1.2kΩ
R223	1-246-671	820Ω
R224	1-246-665	470Ω
R225	1-246-673	1kΩ
R226	1-246-655	180Ω
R227	1-246-645	68Ω
R228	1-246-709	33kΩ
R229	1-246-677	1.5kΩ
R230	1-246-677	1.5kΩ
R231	1-246-673	1kΩ
R232	1-246-649	100Ω
R233	1-246-649	100Ω
R234	1-246-693	6.8kΩ
R235	1-246-649	100Ω
R236	1-246-673	1kΩ
R237	1-246-691	5.6kΩ
R238	1-246-659	270Ω
R239	1-246-697	10kΩ
R240	1-246-673	1kΩ
R241	1-246-657	220Ω
R242	1-250-873	1kΩ RD12T
R243	1-246-649	100Ω
R244	1-246-649	100Ω
R245	1-246-721	100kΩ
R246	1-246-665	470Ω
R247	1-246-689	4.7kΩ
R248	1-246-683	2.7kΩ
R249	1-246-649	100Ω
R250	1-246-705	22kΩ
R251	1-246-643	56Ω
R252	1-246-649	100Ω
R253	1-246-663	390Ω
R254	1-246-697	10kΩ
R255	1-246-673	1kΩ
R256	1-246-649	100Ω
R257	1-246-687	3.9kΩ

Ref. No.	Part No.	Description
R258	1-246-705	22kΩ
R259	1-246-673	1kΩ
R260	1-246-697	10kΩ
R261	1-246-705	22kΩ
R262	1-248-687	3.9kΩ ERD14V
R263	1-248-713	47kΩ ERD14V
R264	1-246-689	4.7kΩ
R265	1-246-665	470Ω
R266	1-246-705	22kΩ
R267	1-248-717	68kΩ ERD14V
R268	1-246-673	1kΩ
R269	1-246-701	15kΩ
R270	1-250-858	240Ω RD12T
R271	1-250-859	270Ω RD12T
R272	1-206-055	100Ω 2W metal oxide
R273	1-246-637	33Ω
R274	1-246-667	560Ω
R275	1-246-675	1.2kΩ
R301	1-246-681	2.2kΩ
R302	1-246-669	680Ω
R303	1-246-695	8.2kΩ
R304	1-246-685	3.3kΩ
R305	1-246-655	180Ω
R306	1-246-673	1kΩ
R307	1-246-669	680Ω
R308	1-246-681	2.2kΩ
R309		– discarded –
R310	1-246-653	150Ω
R311	1-246-653	150Ω
R312	1-246-701	15kΩ
R313	1-246-685	3.3kΩ
R314	1-246-673	1kΩ
R315	1-246-667	560Ω
R316	1-246-641	47Ω
R317	1-246-693	6.8kΩ
R318	1-246-693	6.8kΩ
R319	1-246-693	6.8kΩ
R320	1-246-693	6.8kΩ
R321	1-246-701	15kΩ
R322	1-246-697	10kΩ
R323	1-246-701	15kΩ
R324	1-246-697	10kΩ
R325	1-246-653	150Ω
R326	1-246-665	470Ω
R327	1-246-673	1kΩ
R328	1-246-649	100Ω
R329		– discarded –
R330		– discarded –
R331	1-246-653	150Ω
R332	1-246-673	1kΩ
R333	1-246-673	1kΩ
R334	1-246-705	22kΩ
R335	1-246-705	22kΩ
R336	1-246-721	100kΩ
R337	1-246-721	100kΩ
R338	1-246-695	8.2kΩ
R339	1-250-897	10kΩ RD12T
R340	1-246-697	10kΩ
R341	1-246-661	330Ω
R342	1-246-681	2.2kΩ
R343	1-246-663	390Ω
R344	1-246-653	150Ω
R345	1-246-701	15kΩ
R346	1-246-685	3.3kΩ
R347	1-246-675	1.2kΩ
R348	1-246-633	22Ω
R349	1-246-661	330Ω
R350	1-246-673	1kΩ
R351	1-246-653	150Ω
R352	1-246-701	15kΩ
R353	1-246-685	3.3kΩ
R354	1-246-675	1.2kΩ
R355	1-246-637	33Ω
R356	1-246-661	330Ω
R357	1-246-659	270Ω
R358	1-246-711	39kΩ
R359	1-246-681	2.2kΩ
R360	1-246-649	100Ω
R361	1-246-697	10kΩ
R362	1-246-661	330Ω
R363	1-246-681	2.2kΩ
R364	1-246-663	390Ω
R365	1-246-653	150Ω
R366	1-246-701	15kΩ
R367	1-246-685	3.3kΩ
R368	1-246-675	1.2kΩ
R369	1-246-633	22Ω
R370	1-246-661	330Ω
R371	1-246-673	1kΩ
R372	1-246-653	150Ω
R373	1-246-701	15kΩ
R374	1-246-685	3.3kΩ
R375	1-246-675	1.2kΩ
R376	1-246-637	33Ω
R377	1-246-661	330Ω
R378	1-246-711	39kΩ
R379	1-246-659	270Ω
R380	1-246-681	2.2kΩ
R381	1-246-649	100Ω
R382	1-246-701	15kΩ
R383	1-246-715	56kΩ
R384	1-246-675	1.2kΩ
R385	1-246-695	8.2kΩ
R386	1-246-681	2.2kΩ
R387	1-246-647	82Ω

Ref. No.	Part No.	Description
R388	1-246-671	820Ω
R389	1-246-713	47kΩ
R390	1-246-675	1.2kΩ
R391	1-246-707	27kΩ
R392	1-246-653	150Ω
R393	1-246-683	2.7kΩ
R394	1-246-653	150Ω
R395	1-246-627	12Ω
R396	1-246-661	330Ω
R397	1-246-653	150Ω
R398	1-246-661	330Ω
R401	1-246-685	3.3kΩ
R402	1-246-673	1kΩ
R403	1-246-661	330Ω
R404	1-246-661	330Ω
R405	1-246-689	4.7kΩ
R406	1-246-689	4.7kΩ
R415	1-246-661	330Ω
R416	1-246-661	330Ω
R417	1-246-689	4.7kΩ
R418	1-246-689	4.7kΩ
R419	1-246-673	1kΩ
R420	1-246-681	2.2kΩ
R421	1-246-671	820Ω
R422	1-246-657	220Ω
R423	1-246-673	1kΩ
R424	1-246-673	1kΩ
R425	1-246-673	1kΩ
R426	1-246-673	1kΩ
R427	1-246-673	1kΩ
R428	1-246-673	1kΩ
R429	1-246-673	1kΩ
R430	1-246-673	1kΩ
R436	1-246-681	2.2kΩ
R437	1-246-657	220Ω
R438	1-246-681	2.2kΩ
R451	1-246-667	560Ω
R452	1-246-669	680Ω
R453	1-246-659	270Ω
R454	1-246-657	220Ω
R455	1-246-681	2.2kΩ
R456	1-246-687	3.9kΩ
R457	1-246-697	10kΩ
R458	1-246-669	680Ω
R459	1-250-897	10kΩ RD12T
R460	1-246-709	33kΩ
R461	1-246-713	47kΩ
R462	1-246-707	27kΩ
R463	1-246-665	470Ω
R464	1-246-709	33kΩ
R465	1-246-657	220Ω
R466	1-246-625	10Ω
R467	1-246-677	1.5kΩ
R468	1-246-665	470Ω
R469	1-246-683	2.7kΩ
R470	1-206-104	10kΩ 1W metal oxide
R471	1-246-659	270Ω
R472	1-246-673	1kΩ
R473	1-246-665	470Ω
R474	1-246-683	2.7kΩ
R475	1-206-104	10kΩ 1W metal oxide
R476	1-246-659	270Ω
R477	1-246-673	1kΩ
R478	1-246-665	470Ω
R479	1-246-683	2.7kΩ
R480	1-206-104	10kΩ 1W metal oxide
R481	1-246-659	270Ω
R482	1-246-673	1kΩ
R483	1-246-709	33kΩ
R484	1-246-733	330kΩ
R485	1-246-693	6.8kΩ
R486	1-246-681	2.2kΩ
R487	1-246-693	6.8kΩ
R488	1-246-697	10kΩ
R489	1-246-705	22kΩ
R501	1-246-705	22kΩ
R502	1-246-697	10kΩ
R503	1-246-705	22kΩ
R504	1-246-637	33Ω
R505	1-246-685	3.3kΩ
R506	1-246-625	10Ω
R507	1-246-679	1.8kΩ
R508	1-246-681	2.2kΩ
R509	1-246-689	4.7kΩ
R510	1-246-677	1.5kΩ
R511	1-246-689	4.7kΩ
R512	1-246-673	1kΩ
R513	1-246-633	22Ω
R514	1-207-185	1Ω ½W wire wound
R515	1-250-909	33kΩ RD12T
R516	1-246-707	27kΩ
R517	1-246-695	8.2kΩ
R518	1-211-090	27kΩ RD1P
R519	1-205-455	100Ω 3W cement coated
R520	1-246-701	15kΩ
R521	1-246-665	470Ω
R522	1-246-665	470Ω
R523	1-246-659	270Ω
R524		– discarded –
R525	1-246-687	3.9kΩ
R526	1-246-687	3.9kΩ
R527	1-246-703	18kΩ

Ref. No.	Part No.	Description
R528		– discarded –
R529		– discarded –
R530	1-246-672	910Ω
R531	1-246-687	3.9kΩ
R532	1-246-673	1kΩ
R533	1-246-673	1kΩ
R534	1-246-667	560Ω
R535	1-246-665	470Ω
R536	1-246-667	560Ω
R537	1-246-677	1.5kΩ
R538	1-206-132	8.2kΩ 2W metal oxide
*R540 *R541	1-206-119	27Ω 2W metal oxide
	1-206-120	33Ω 2W metal oxide
	1-206-297	43Ω 2W metal oxide
R542	1-246-667	560Ω
R543	1-246-697	10kΩ
R544	1-246-707	27kΩ
R545	1-250-825	10Ω RD12T
R546		– discarded –
R547	1-206-130	1.5kΩ 2W metal oxide
R601	1-205-465	2.7kΩ 7W cement coated
R602	1-250-913	47kΩ RD12T
R603	1-250-915	56kΩ RD12T
R604	1-206-049	10kΩ 3W metal oxide
R605	1-246-667	560Ω
R606	1-246-685	3.3kΩ
R607		– discarded –
R608	1-246-709	33kΩ
R609	1-246-735	390kΩ
R610		– discarded –
R611	1-207-241-12	5Ω 0.65A wire wound
R612	1-207-241-12	5Ω 0.65A wire wound
R613	1-205-456	390Ω 3W cement coated
R614		– discarded –
R615	1-206-069	10Ω 1W metal oxide
R616	1-246-665	470Ω
R617		– discarded –
R618	1-250-817	4.7Ω RD12T
R619	1-202-513	3.3Ω RC1/2 composition
R620	1-246-625	10Ω
R651	1-202-629	220kΩ RC1/2 composition
R652	1-202-808	470kΩ RC1 composition
R653	1-202-581	2.2kΩ RC1/2 composition
R654	1-202-581	2.2kΩ RC1/2 composition
R655	1-202-808	470kΩ RC1 composition
R656	1-202-581	2.2kΩ RC1/2 composition
R657	1-202-585	3.3kΩ RC1/2 composition
R701	1-246-661	330Ω
R702	1-246-715	56kΩ
R703	1-246-705	22kΩ
R704	1-246-661	330Ω

Ref. No.	Part No.	Description
R705	1-246-669	680Ω
R706	1-246-681	2.2kΩ
R707	1-246-701	15kΩ
R708	1-246-681	2.2kΩ
R709	1-246-709	33kΩ
R710	1-246-661	330Ω
R711	1-246-709	33kΩ
R712	1-246-661	330Ω
R713	1-246-681	2.2kΩ
R714	1-246-715	56kΩ
R715	1-246-705	22kΩ
R716	1-246-697	10kΩ
R717	1-246-709	33kΩ
R718	1-246-681	2.2kΩ
R719	1-246-705	22kΩ
R720	1-246-709	33kΩ
R721	1-246-685	3.3kΩ
R722	1-246-685	3.3kΩ
R723	1-246-661	330Ω
R724	1-246-697	10kΩ
R725	1-246-709	33kΩ
R726	1-246-709	33kΩ
R727	1-246-697	10kΩ
R728	1-246-697	10kΩ
R729	1-246-671	1kΩ
R730	1-246-725	150kΩ
R731	1-246-697	10kΩ
R732	1-246-709	33kΩ
R733	1-246-697	10kΩ
R734	1-246-697	10kΩ
R735	1-246-685	3.3kΩ
R736	1-246-685	3.3kΩ
R737	1-246-657	220Ω
R751	1-246-679	1.8kΩ
R752	1-246-696	9.1kΩ
R753	1-246-667	560Ω
R754	1-246-661	330Ω
R755	1-246-685	3.3kΩ
R756	1-246-685	3.3kΩ
R757	1-246-689	4.7kΩ
R758	1-246-679	1.8kΩ
R759	1-246-635	27Ω
R760	1-246-667	560Ω
R761	1-246-687	3.9kΩ
R762	1-246-661	330Ω
R763	1-246-653	150Ω
R801	1-250-895	8.2kΩ RD12T
R802	1-202-631	270kΩ RC1/2 composition
R803	1-202-575	1.2kΩ RC1/2 composition
R804	1-207-249	1.8Ω 1W wire wound
R805		– discarded –
R806	1-205-459	82Ω 7W cement coated

* Mark to be selected.

TRINITRON®
COLOUR TV

KV-1320UB

UK and Hongkong Model

Serial No. up to 100,000

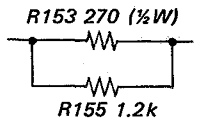
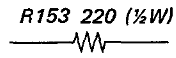
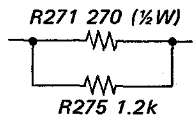
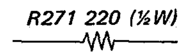
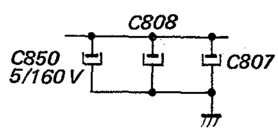
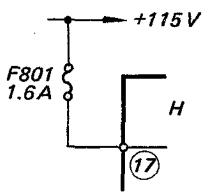
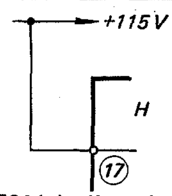
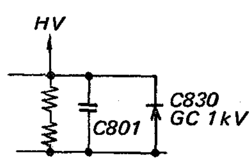
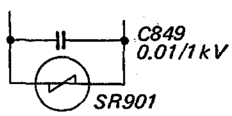
SUPPLEMENT

No. 3
September, 1972

This supplement updates the service manual to include corrections and production changes covering the model whose **Serial No. is 100,000 and less.** Please file this supplement in the service manual.

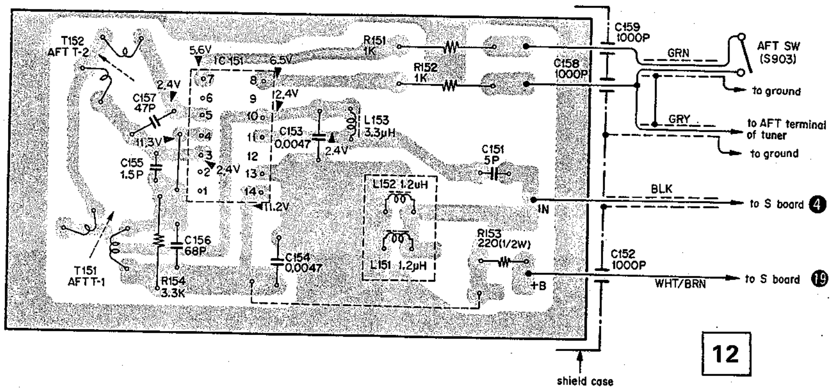
SONY®
SERVICE MANUAL

1. CHANGED PORTIONS ON DIAGRAMS

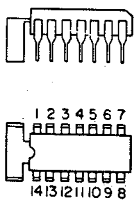
Mark on Diagram	Ref. No.	Description	Applicable Serial No.
Ⓐ	R153 R155	 →  R155 is discarded.	15,001 and later
Ⓑ	R271 R275	 →  R275 is discarded.	15,001 and later
Ⓒ	R436	2.2k → 22	15,001 and later
Ⓓ	R348	22 → 10	15,001 and later
Ⓔ	R369	22 → 10	15,001 and later
Ⓕ	R425	1k → 1.2k	15,001 and later
Ⓖ	R384	1.2k → 560	15,001 and later
Ⓗ	R464	33k → 39k	15,001 and later
Ⓙ	R901 S901	R901 (1.2k, 5W) is discarded. Connecting point of power switch (S901) is changed.	32,601 (UK) 11,401 (Hong Kong) and later
Ⓚ	C850	 C850 is added.	11,501 and later
Ⓛ	F801	 →  F801 is discarded.	15,737 and later
Ⓜ	C830	 C830 is added.	45,301 and later
Ⓝ	C849	 C849 is added.	15,001 and later
Ⓟ	C601 C602	0.0047/150V → 0.0047/500V	25,001 and later

2. DIAGRAMS

2-1. AFT CIRCUIT BOARD

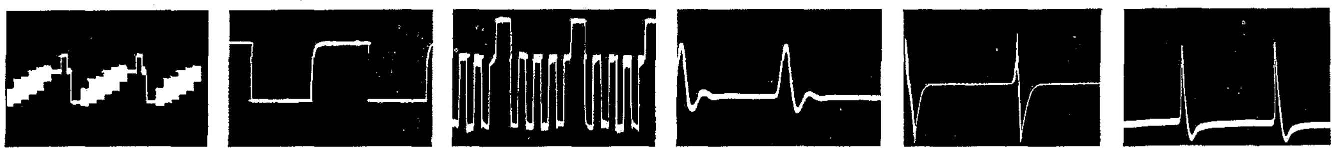


1C151

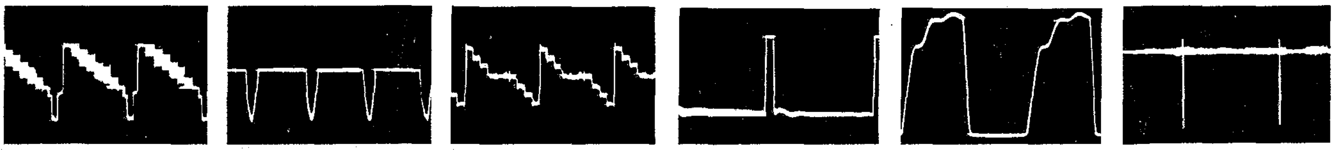


bottom view

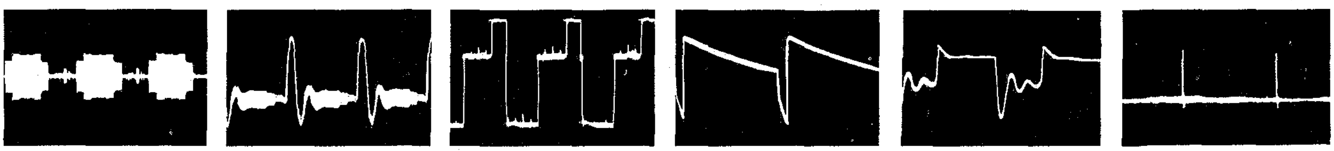
2-2. WAVEFORMS



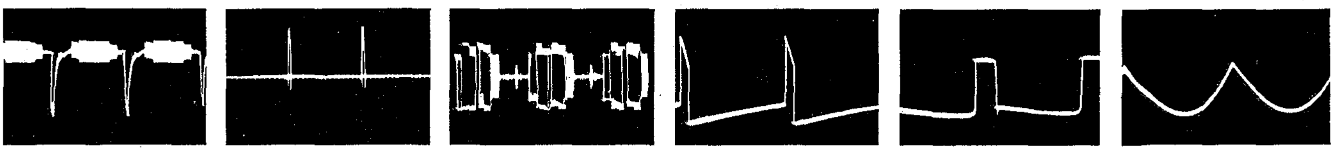
(1) 1.2 Vp-p (Horiz.) | (10) 13.0 Vp-p (Horiz.) | (18) 108 Vp-p (Horiz.) | (31) 6.0 Vp-p (Horiz.) | (39) 5.0 Vp-p (Vert.) | (47) 0.92 Vp-p (Vert.)



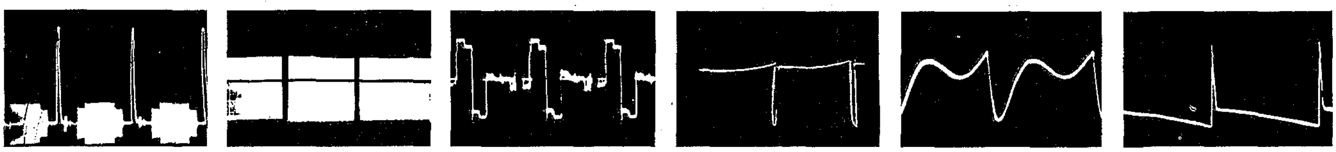
(2) 3.5 Vp-p (Horiz.) | (11) 115 Vp-p (Horiz.) | (24) 2.9 Vp-p (Horiz.) | (32) 11.0 Vp-p (Horiz.) | (40) 240 Vp-p (Horiz.) | (48) 8.0 Vp-p (Vert.)



(3)(4) 1.1 Vp-p (Horiz.) | (12)(19) 4.1 Vp-p (Horiz.) | (25) 96 Vp-p (Horiz.) | (33) 7.8 Vp-p (Horiz.) | (41) 3.6 Vp-p (Horiz.) | (49) 5.6 Vp-p (Vert.)



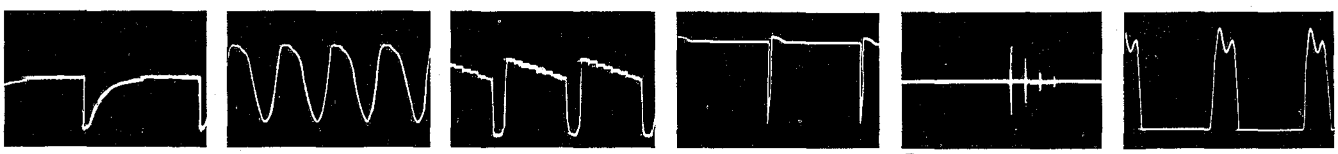
(5) 3.3 Vp-p (Horiz.) | (13)(20) 9.0 Vp-p (Horiz.) | (26) 6.0 Vp-p (Horiz.) | (34) 8.4 Vp-p (Horiz.) | (42) 15.0 Vp-p (Horiz.) | (50) 0.35 Vp-p (Vert.)



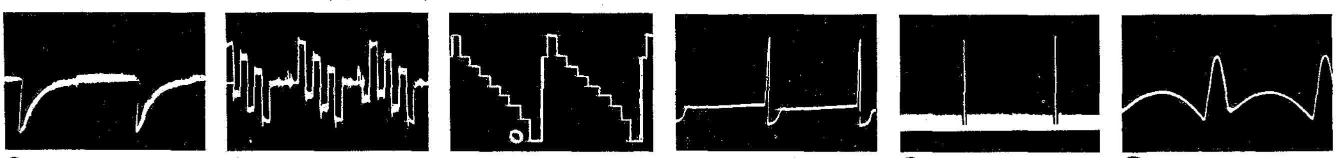
(6) 5.4 Vp-p (Horiz.) | (14)(21) 1.5 Vp-p (Horiz) | (27) 3.6 Vp-p (Horiz.) | (35) 8.0 Vp-p (Vert.) | (43) 1.8 Vp-p (Horiz.) | (51) 500 Vp-p (Vert.)



(7) 12.5 Vp-p (Horiz.) | (15)(22) 8.8 Vp-p (4.43 MHz) | (28) 108 Vp-p (Horiz.) | (36) 1.0 Vp-p (Vert.) | (44) 4.0 Vp-p (Horiz.) | (52) 610 Vp-p (Horiz.)

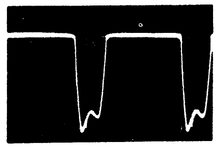


(8) 12.0 Vp-p (Horiz.) | (16)(23) 1.8 Vp-p (4.43 MHz) | (29) 6.8 Vp-p (Horiz.) | (37) 4.8 Vp-p (Vert.) | (45) 4.2 Vp-p (Horiz.) | (53) 610 Vp-p (Horiz.)

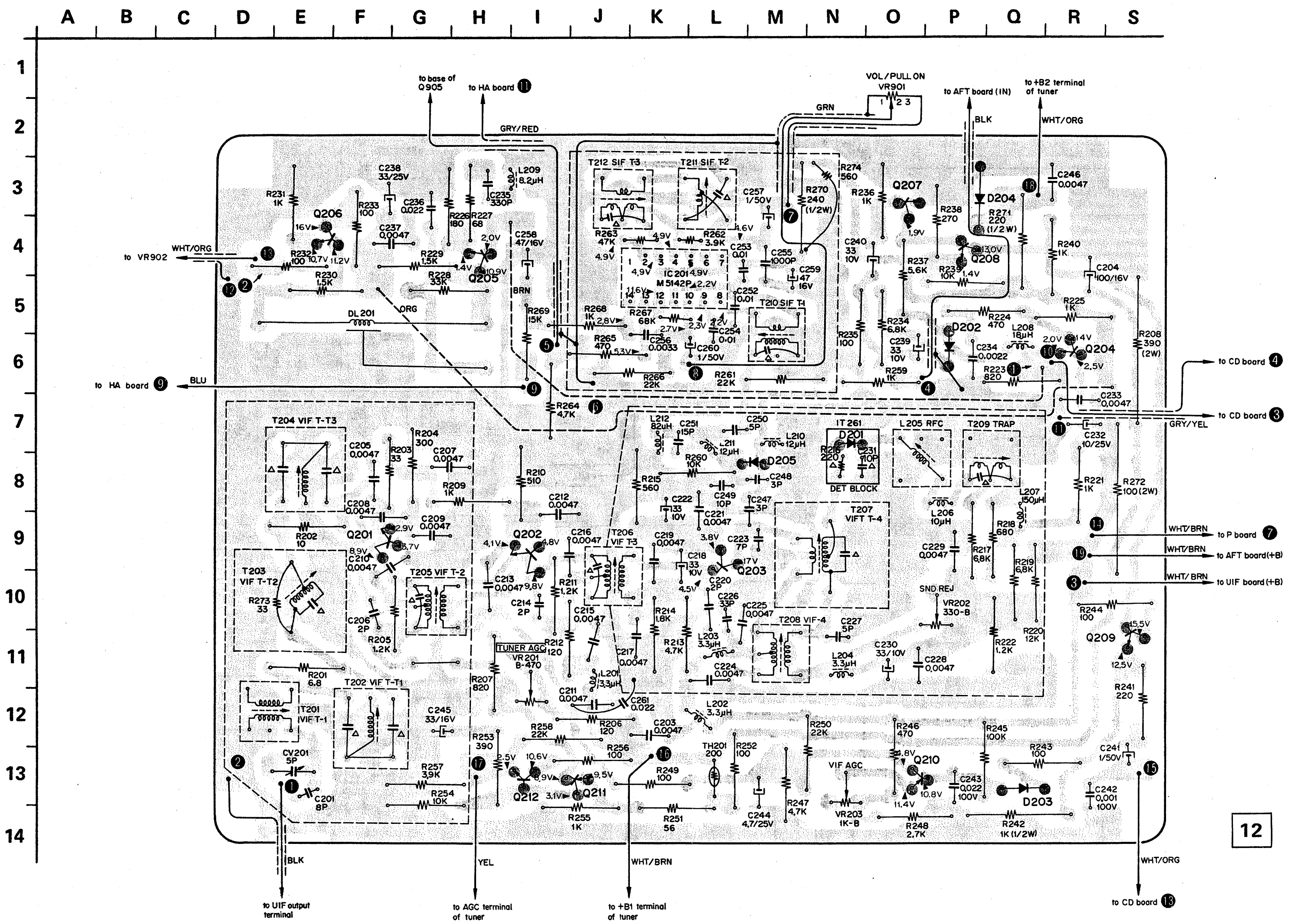


(9) 12.0 Vp-p (Horiz.) | (17) 4.0 Vp-p (Horiz.) | (30) 4.8 Vp-p (Horiz.) | (38) 4.6 Vp-p (Vert.) | (46) 4.0 Vp-p (Vert.) | (54) 200 Vp-p (Horiz.)

2-3. S CIRCUIT BOARD



(55) 110 Vp-p (Horiz.)



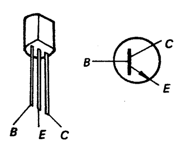
TRANSISTORS

Q201	F-9	2SC1129
Q202	I-9	2SC1129
Q203	L-9	2SC1128
Q204	R-6	2SC633A
Q205	H-4	2SC633A
Q206	E-4	2SC633A
Q207	O-3	2SC633A
Q208	P-4	2SC633A
Q209	S-11	2SC633A
Q210	O-13	2SA678
Q211	J-13	2SA678
Q212	I-13	2SC633A

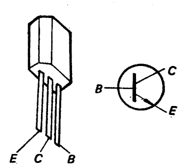
DIODES

D201	N-7	1T261
D202	P-6	1T40
D203	Q-13	1T40
D204	P-3	ZB1-11
D205	M-8	1T261

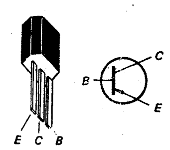
2SC1128
2SC1129



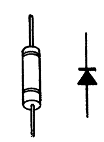
2SC633A



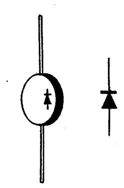
2SA678



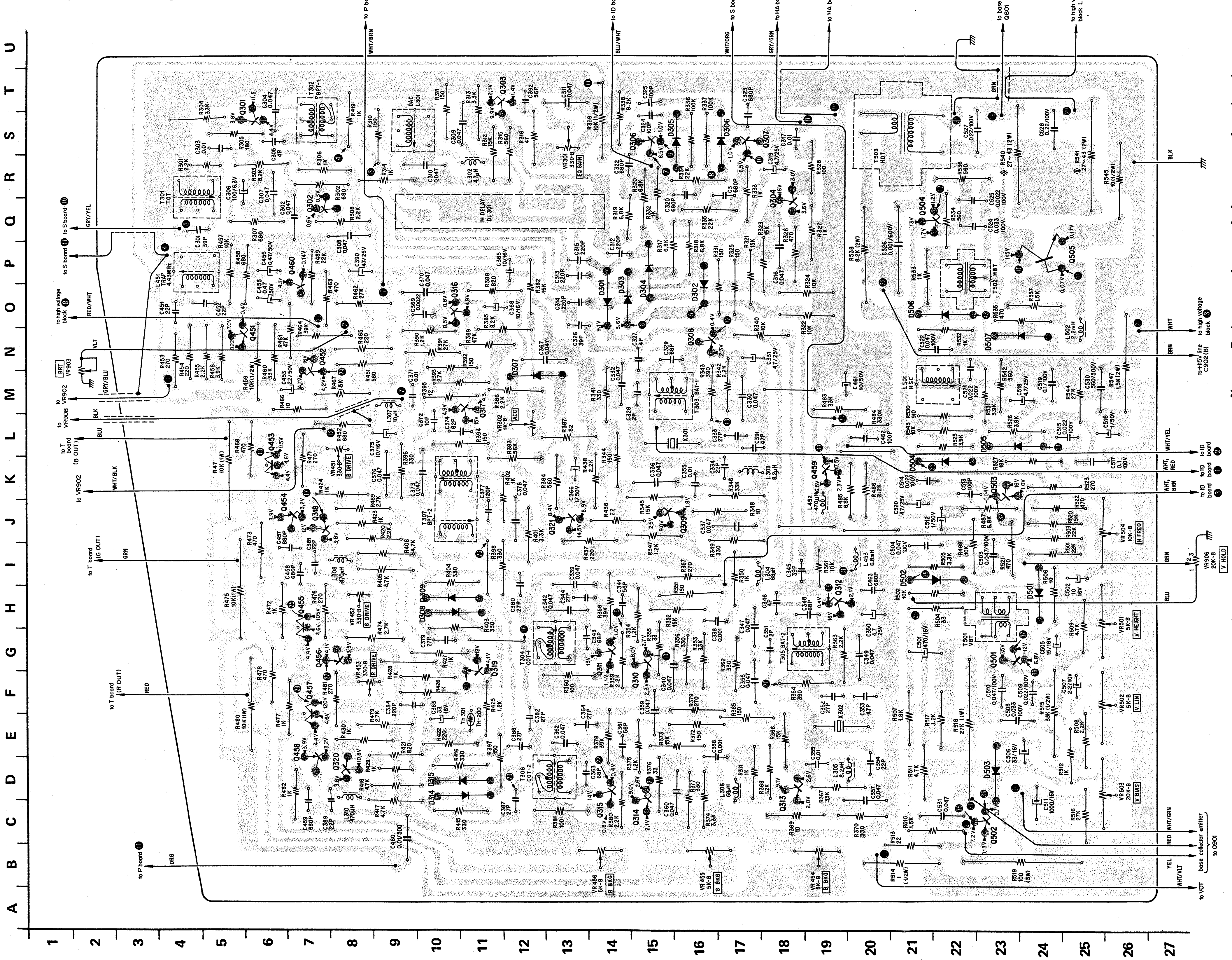
1T261
1T40



ZB1-11



2-4. CD CIRCUIT BOARD



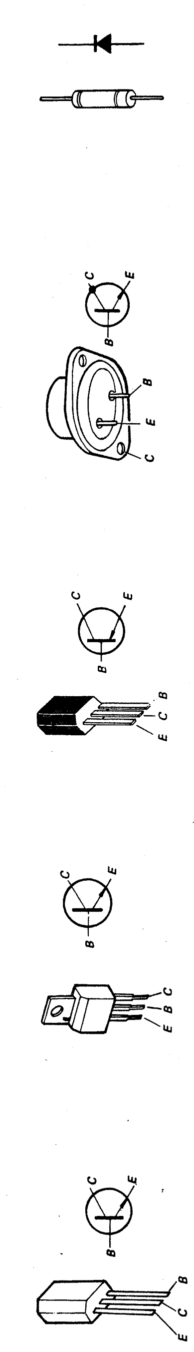
Note: Resistance values marked ※ are to be selected to yield specified operating conditions.

TRANSISTORS

Q301	S-6	2SC403B
Q302	Q-7	2SC633A
Q303	T-11, 12	2SC403B
Q304	Q-18	2SC403C
Q305		discarded
Q306	S-15	2SC633A
Q307	S-17	2SC633A
Q308	N-16	2SC403C
Q309	J-15	2SC403B
Q310	G-15	2SC403B
Q311	G-14	2SC403C
Q312	H-19	2SC403C
Q313	D-18	2SC403B
Q314	D-15	2SC403B
Q315	D-14	2SC403C
Q316	O-11	2SC633A
Q317	M-11	2SC403C
Q318	J-7	2SC633A
Q319	G-11	2SC633A
Q320	D-8	2SC633A
Q321	J-13	2SC633A
Q451	N-5	2SC633A
Q452	M, N-7	2SC633A
Q453	K-6	2SC1127
Q454	J-7	2SA678
Q455	G, H-7	2SC1127
Q456	G-8	2SA678
Q457	E, F-7	2SC1127
Q458	D, E-7	2SA678
Q459	K-19	2SA678
Q460	O-7	2SC633A
Q501	G-23	2SC633A
Q502	C-23	2SC633A
Q503	K-23	2SC633A
Q504	Q-21, 22	2SC403A
Q505	P-24	2SC867

DIODES

D301	D-14	1T40
D302	O, P-16	1T40
D303	O-14	1T40
D304	P-15	1T40
D305	S-16	1T40
D306	S-17	1T40
D307	M-12, 13	1T40
D308	H-10, 11	1T40
D309	H-10, 11	1T40
D314	D-10, 11	1T40
D315	D-10, 11	1T40
D501	H-24	1T40
D502	I-21, 22	1T40
D503	D-23	1T40
D504	K-21, 22	1T22A
D505	L-23, 24	1T22A
D506	O-21, 22	1T40
D507	N-23, 24	1T40



all diodes

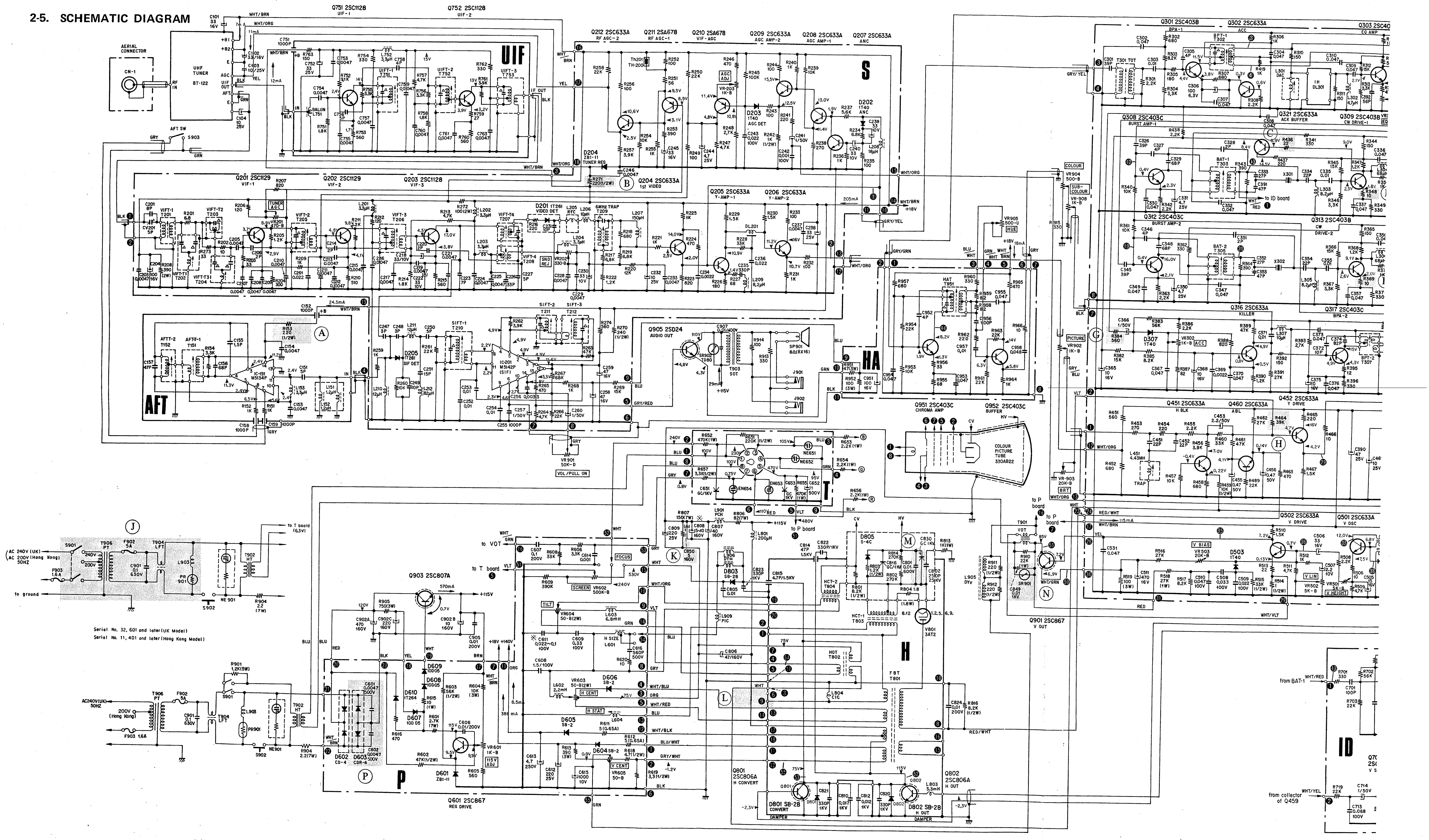
2SC867

2SA678

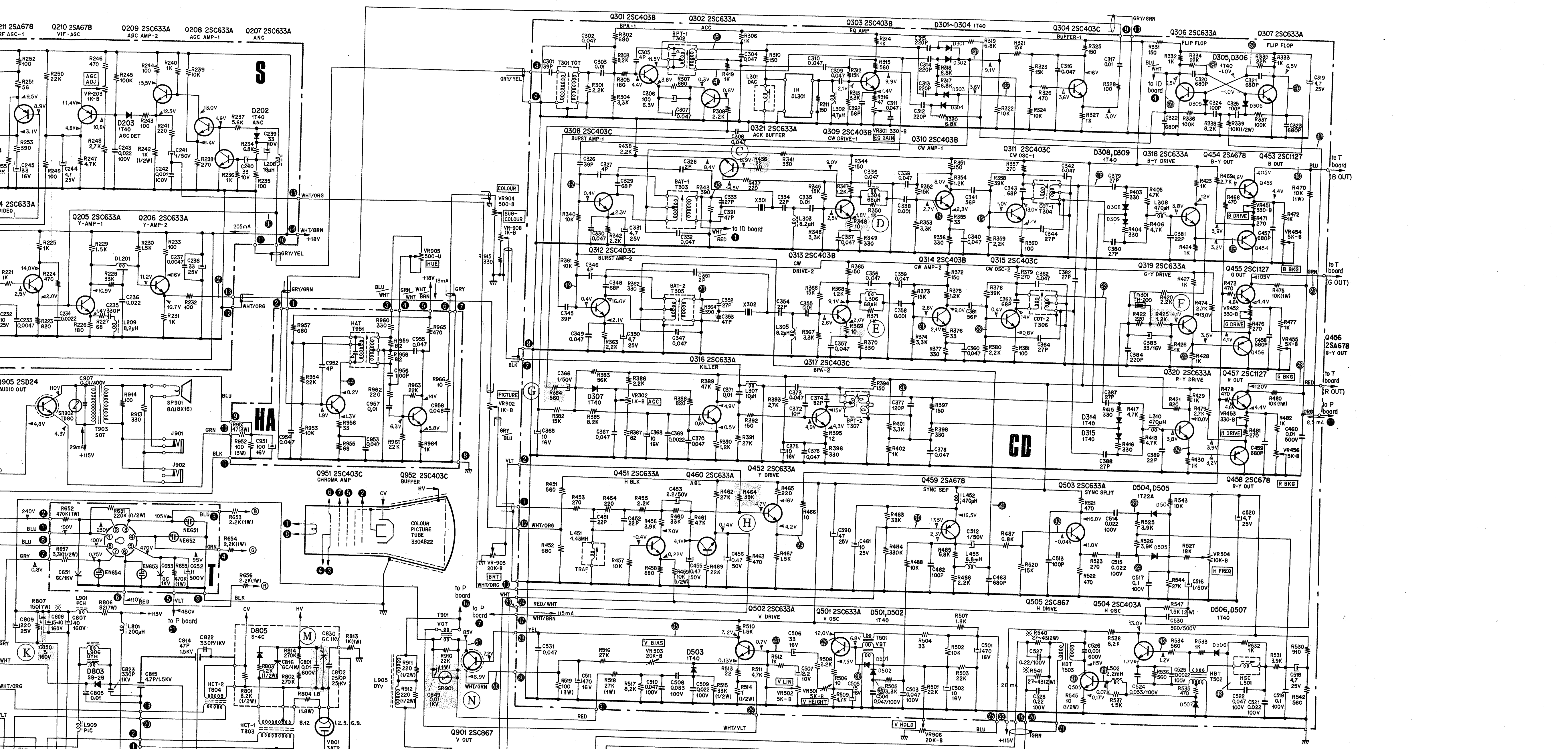
2SC1127

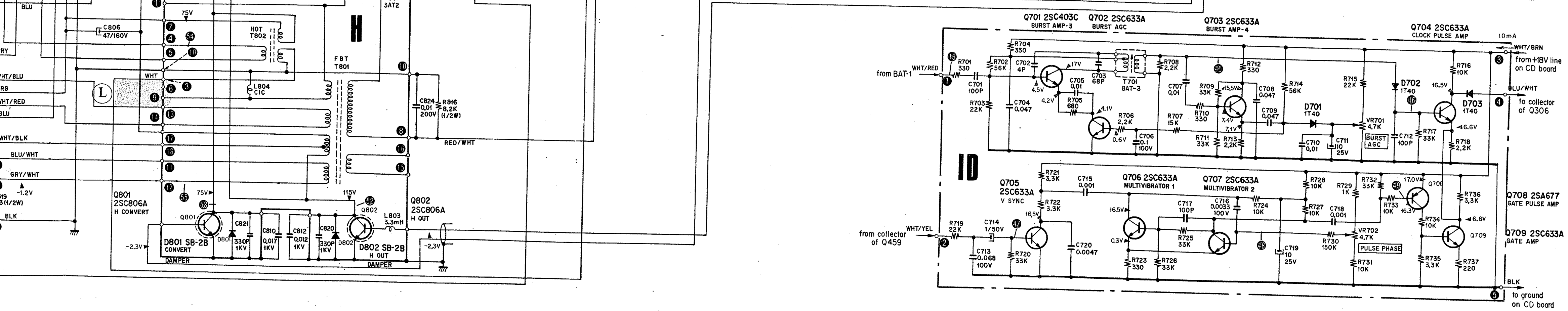
2SC403A
2SC403B
2SC403C
2SC633A

2-5. SCHEMATIC DIAGRAM



KV-1320UB





Note:

1. All capacitors are 50WV unless otherwise specified.
2. All resistors are ¼W unless otherwise specified.
3. All resistance values are in ohms. k = 1000
4. All capacitance values are in μF except as indicated with p, which means $\mu\mu$F.
5. Voltages measured from chassis to point indicated with a VOM (DC 20k ohms/V) with colour signal input.
6. Resistance values marked ※ are to be selected to yield specified operating conditions.
7. △ marks show the internal components of transformers.

3. PARTS LIST OF CHANGED PARTS

1. Mechanical Parts

Part No.	*Description*
X-43048-02-5	cabinet ass'y
4-304-806-00	cabinet
4-304-145-00	mounting plate, power transformer

2. Packing Parts

Part No.	*Description*
4-304-173-00	cushion, left
4-304-845-03	packing carton
4-304-850-00	cushion, right

Note: Packing parts for UK model have been changed starting with Serial No. 37,001. There have been no changes with Hong Kong model.

3. Electrical Parts

Ref. No.	*Part No.*	*Description*			
C231	1-102-947-11	10 pF	±5%	50WV	ceramic
C261	1-101-005-11	0.022 μF	$\pm^{100}_{0}$%	50WV	ceramic
C601	1-102-085-11	0.0047 μF	$\pm^{80}_{20}$%	500WV	ceramic
C830	1-519-030-11	spark gap		1kV	
C849	1-108-355-11	0.01 μF	±20%	1kWV	mylar
C850	1-119-246-11	5 μF	±20%	160WV	electrolytic
C907	1-105-793-13	0.01 μF	±10%	400WV	mylar
R153	1-244-857-11	220Ω	½W		
R155		---------------			
R216	1-244-657-11	220Ω			
R242	1-244-873-11	1 kΩ	½W		
R270	1-244-858-11	240Ω	½W		
R271	1-244-857-11	220Ω	½W		
R275		---------------			
R348	1-244-625-11	10Ω			
R369	1-244-625-11	10Ω			
R384	1-244-667-11	560Ω			
R425	1-244-675-11	1.2 kΩ			
R436	1-244-633-11	22Ω			
R464	1-244-711-11	39 kΩ			
R515	1-244-909-11	33 kΩ	½W		
R518	1-258-107-11	27 kΩ	1W		
R545	1-244-825-11	10Ω	½W		
R901		---------------			
R910	1-258-105-11	22 kΩ	1W		
VR901	1-222-624-11	50 kΩ-D variable (PULL ON/VOL)			
VR905	1-222-579-11	500Ω-U variable (HUE)			
F801		---------------			
F902	1-532-366-00	fuse, 5A 125V			
NE901	1-519-019-00 1-519-077-00	neon lamp			
TB901	1-536-189-00 1-536-386-00	terminal lug, 1L1			

 KV-1320UB

Ref. No.	*Part No.*	*Description*	
R369	1-244-625-11	10Ω	
R384	1-244-667-11	560Ω	
R425	1-244-675-11	1.2 kΩ	
R436	1-244-633-11	22Ω	
R464	1-244-711-11	39 kΩ	
R515	1-244-909-11	33 kΩ	½W
R518	1-258-107-11	27 kΩ	1W
R545	1-244-825-11	10Ω	½W
R901		---------------	
R910	1-258-105-11	22 kΩ	1W
VR901	1-222-624-11	50 kΩ-D variable (PULL ON/VOL)	
VR905	1-222-579-11	500Ω-U variable (HUE)	
F801		---------------	
F902	1-532-366-00	fuse, 5A 125V	
NE901	(1-519-019-00 1-519-077-00	neon lamp	
TB901	(1-536-189-00 1-536-386-00	terminal lug, 1L1	

9-962-052-81

Sony Corporation

78F0606-4
Printed in Japan

Ref. No.	Part No.	Description
R807	1-205-460	150Ω 7W cement coated
R813	1-202-776	1kΩ RC1 composition
R814	1-202-631	270kΩ RC1/2 composition
R815		– discarded –
R816	1-250-895	8.2kΩ RD12T
R901	1-205-462	1.2kΩ 5W cement coated
R902		– discarded –
R903		– discarded –
R904	1-205-464	2.2Ω 7W cement coated
R905	1-205-466	750Ω 3W cement coated
R910	1-211-172	22kΩ RD1P
R911		– discarded –
R912		– discarded –
R913	1-246-661	330Ω
R914	1-246-649	100Ω
R915	1-246-661	330Ω
R951	1-217-027	47Ω 3W wire wound
R952	1-205-455	100Ω 3W cement coated
R953	1-246-697	10kΩ
R954	1-246-705	22kΩ
R955	1-246-645	68Ω
R956	1-246-637	33Ω
R957	1-246-669	680Ω
R958	1-246-647	82Ω
R959	1-246-647	82Ω
R960	1-246-661	330Ω
R961	1-246-705	22kΩ
R962	1-246-657	220Ω
R963	1-246-705	22kΩ
R964	1-246-673	1kΩ
R965	1-246-665	470Ω
R966	1-246-625	10Ω
VR201	1-222-805	470Ω-B adjustable (TUNER AGC)
VR202	1-221-986	330Ω-B adjustable (SND REJ)
VR203	1-222-804	1kΩ-B adjustable (AGC ADJ)
VR301	1-222-986	330Ω-B adjustable (EQ GAIN)
VR302	1-222-804	1kΩ-B adjustable (ACC)
VR451	1-222-986	330Ω-B adjustable (B. DRIVE)
VR452	1-222-986	330Ω-B adjustable (G. DRIVE)
VR453	1-222-986	330Ω-B adjustable (R. DRIVE)
VR454	1-222-716	5kΩ-B adjustable (B. BKG)
VR455	1-222-716	5kΩ-B adjustable (G. BKG)
VR456	1-222-716	5kΩ-B adjustable (R. BKG)
VR501	1-221-389	5kΩ-B adjustable (V. HEIGHT)
VR502	1-221-389	5kΩ-B adjustable (V. LIN)
VR503	1-222-807	20kΩ-B adjustable (V. BIAS)
VR504	1-221-304	10kΩ-B adjustable (H. FREQ)
VR601	1-222-715	1kΩ-B variable (115V ADJ)
VR602	1-222-809	500kΩ-B adjustable (SCREEN)
VR603	1-222-172	50Ω-B 2W variable (H. CENT)
VR604	1-222-172	50Ω-B 2W variable (TILT)
VR605	1-222-172	50Ω-B 2W variable (V. CENT)
VR701	1-221-978	4.7kΩ-B adjustable (BURST AGC)
VR702	1-221-978	4.7kΩ-B adjustable (PULSE PHASE)
VR901	1-222-342	50kΩ-D variable (VOL/PULL ON)
VR902	1-222-383	1kΩ-B variable (PICTURE)
VR903	1-222-384	20kΩ-B variable (BRT)
VR904	1-222-386	500Ω-B variable (COLOUR)
VR905	1-222-527	500Ω-U variable (HUE)
VR906	1-222-384	20kΩ-B variable (V. HOLD)

MISCELLANEOUS

Ref. No.	Part No.	Description
DL201	1-415-045	delay line
DL301	1-415-046	delay line, 1H
	1-452-014	magnet B, disk
	1-452-032	magnet, disk (small)
	1-452-038	magnet, convergence
	1-452-054	magnet, rubber ferrite ring
SP901	1-502-309	speaker
	1-506-108	terminal pin, sv
	1-506-186	pin plug
J901, 902	1-507-169-13	jack, earphone
	1-507-901-12	jack nut
	1-508-457	aerial connector
S902	1-515-119	circuit breaker
S903	1-514-892	rotary switch, AFT
NE651, NE652, NE653, NE654	1-519-013-13	neon lamp
NE901	1-519-019-26	neon lamp
V801	1-525-118	vacuum tube, 3AT2
K651	1-526-086	socket, picture tube
ANODE	1-526-130-51	anode cap (1), high voltage
NECK	1-526-131-51	anode cap (2), convergence
K801	1-526-187	socket, mold
X301, 302	1-527-183	crystal
F801	1-532-209	fuse, 1.6A
F902	1-532-214	fuse, 5A/125V
F903	1-532-259	fuse, 1.6A
	1-536-047	terminal strip, E type
	1-534-502	cord, power supply
	1-536-171	lug terminal plate, L7L
TB901	1-536-189	lug terminal strip, 1L1
TB802	1-536-221	terminal plate ass'y, 3P
TB803	1-536-273	terminal plate ass'y, 8p
	1-536-296	lug terminal strip, 1L3L1
	1-536-296	lug terminal strip, 1L3L1
	8-735-300	Picture tube (330AB22)